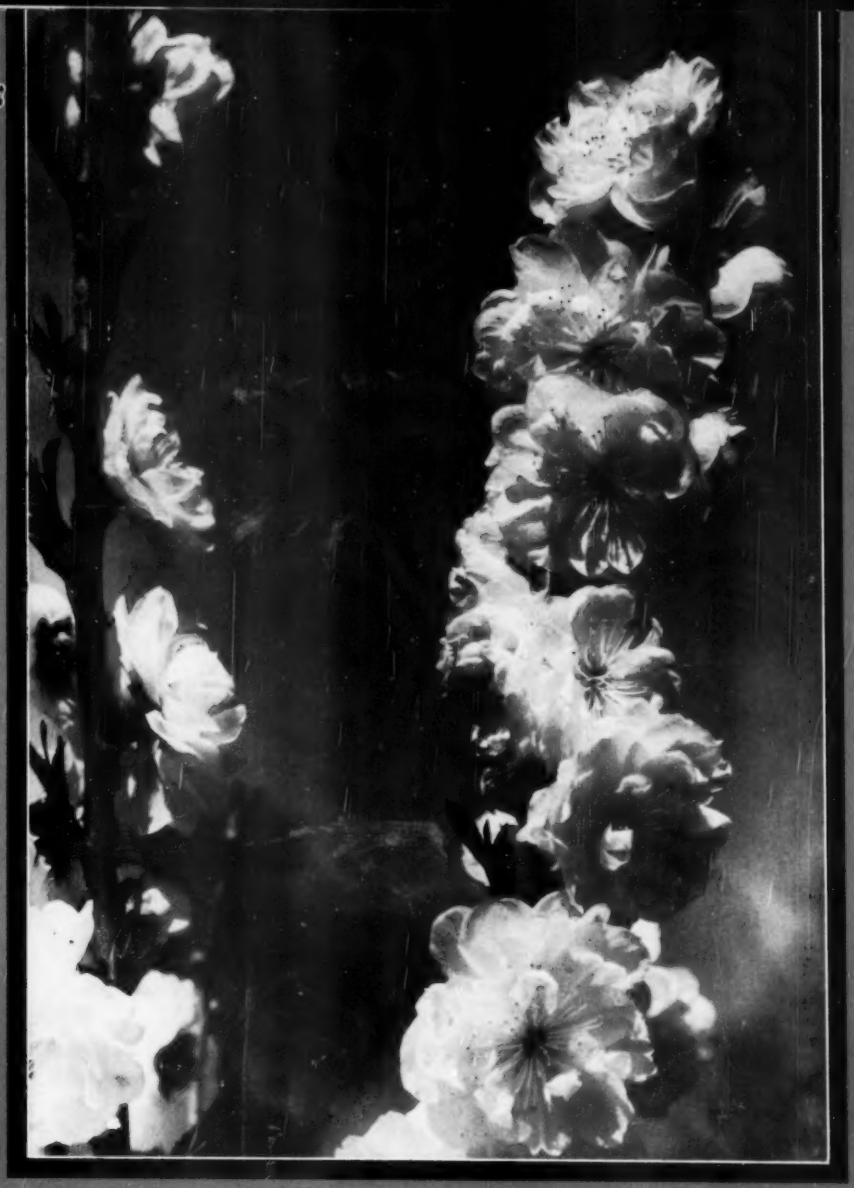

APRIL, 1950

American Bee Journal

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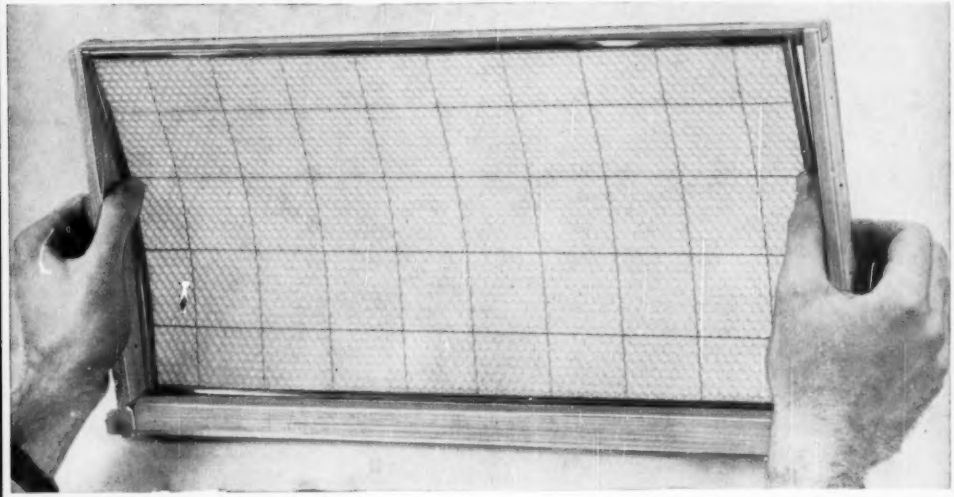

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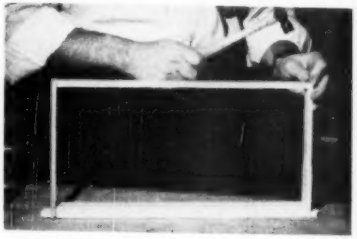
Unbelievable Speed-- With DADANT'S GILT-4-EDGE FOUNDATION and LEWIS NAILLESS TOP BAR FRAME you can set up a frame and put in the foundation, ready for the hive, in thirty seconds.



No Wiring, No Embedding, WONDERFUL COMBS

Insert the side bars in the holding slots and extensions in the top bar (see picture); insert two nails in the bottom bar through bored holes (see picture); snap in the foundation (see top picture); and there you have it—ready to use. You can carry the foundation and frames in the flat in the seat of your car and put them up right by any hive where you need new frames with foundation—for that new swarm—for comb replacement—for your divides. This combination will save you time, money and labor. Try a sample of Gilt-4-Edge Foundation and a Lewis Nailless Top Bar Frame, ready to set up. Send 25 cents to cover cost of wrapping and mailing to either address.

G. B. LEWIS CO.
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DADANT & SONS, Inc.
HAMILTON, ILLINOIS

Dadant's—Gilt-3-Edge Foundation, with top hooks (instead of top metal edge) will also fit any frame with a wedge in the top bar and slotted bottombar. The Lewis Nailless Top Bar Frame can also be used with any other foundation.

This is a strong colony like we want it, according to Bill Coggshall, who took the picture (page 188). Agreed?

Contents

Volume 90, No. 4 April, 1950

The American Bee Journal
HAMILTON, ILLINOIS
Editor—G. H. Cale
Associate Editors—M. G. Dadant, Frank C. Pellett, Roy A. Grout
Managing Editor—Adelaide Fraser

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Encyclopaedia Britannica, in their film "The Honey Bee," produced this industrious worker in a fruit bloom.

Ad Index

• As We

GO SEE YOUR EXPRESS AGENT—In the January issue of this journal, the leading editorial was entitled, "You Can Help Reduce Express Rates." It urged you to go to your local express agent and convince him that it would be to the advantage of the Railway Express Agency to reconsider their higher rates on package-bee shipments inasmuch as the beekeeping industry cannot afford this increase. The editorial suggested that you urge him to write his superiors regarding this industry problem.

Since that time, we have heard very little from beekeepers about this. We question that they are making any serious attempt generally to get express rates reduced. And the time is at hand when they are going to be astounded by the amount of their express bill, if packages are received from this agency.

Your express agent is your friend. He is a member of your local community. He doesn't like this increase in express rates any better than you do. In the case of many of them, their total earnings are based upon the amount of business they do. Go to your local express agent and get his support in this matter.

POLLINATION HAS GROWING PAINS. As the honey producer approaches the problem of pollination, he is perplexed by many things. He has been accustomed to paying for locations; he thinks in terms of a honey crop and one colony to the acre. Beekeepers generally have just reached the point where they feel that they shouldn't have to pay for locations—**they haven't progressed much further than that.**

And neither has the general farm owner or operator. He wants to raise legume seed because it is good for his land, fits into his farm program, and he gets a good price for the seed. He has heard that honey bees are necessary for insuring a set of seed, but he thinks in terms of fewer colonies than will give him a good set of seed and he strongly contends that he is doing the beekeeper a favor just by providing him with a location for the bees. Only in a few specialized areas does this picture differ.

The beekeeper, therefore, must first convince the farmer or grower that honey bees not only are necessary but that increased yields of seed can be obtained only by moving in more colonies of bees than will produce a crop of honey. In most cases, he is going to have to make some arrangement wherein he takes the risk with the farmer on the success or failure, as the case may be, of the seed production practice. **Whatever the approach to pollination may be, it must ultimately result in the beekeeper being paid for the pollination task.** Times and conditions have changed, and so must change the beekeeper's approach to pollination.

SELL THE HONEY. The greatest danger in the government action in providing price support is that too many beemen may look to the government to provide a market and will reduce their efforts to sell their honey.

The amount of honey produced in this country is so small that a little imagination combined with an aggressive sales campaign would move it all and create a demand for more than is available. It was in 1908 that the orange growers of California started the initial campaign to advertise citrus fruit. The first advertising was placed in an Iowa newspaper and resulted in a fifty per cent increase in the sale of oranges in that state. Since then, advertising has been greatly extended and the production of citrus multiplied many times.

Here and there we find someone who is selling honey at prices far above the proposed

See It •

support level without difficulty. Well directed sales effort will solve the problem. Let the industry get busy and sell the honey.

ESSENTIALS OF SUCCESS WITH Bees. The high cost of labor has caused many beemen to discover that much of the manipulation which they practice is unnecessary. Frequent examination of the brood nest is often harmful and results in reducing the crop. When conditions are normal the bees will do a pretty good job of looking out for themselves and storing a crop of honey.

It has often been pointed out that given three essentials we can look forward with confidence to success: Good combs of worker cells built on full sheets of comb foundation which will provide room for a prolific queen to lay enough eggs to give a strong working force; a sufficient reserve of sealed stores to insure that brood rearing will continue though weather be unfavorable; and sufficient room for expansion of the brood and the storing of honey to help prevent swarming.

BEES FOR POLLINATION IN Holland. The Welsh Beekeeper for January has a very significant article on beekeeping in Holland, written by Dr. A. Minderhoud of that country.

Centuries ago the Netherlands abounded in heather and buckwheat, but as the country intensified agriculturally, these plants dropped in acreage and beekeeping fell off until the beginning of the present century, at which time there were seventy thousand colonies.

About this time it became evident to the authorities that bees were a necessity in their fruit culture and agriculture, and the government stepped into the picture to encourage beekeeping. Now there are some 180 thousand colonies in the country, largely in the hands of individual farmers and run with little regard to the honey crop. In fact recommendations are made in some instances not to move to possible heather fields and not to take more than a pittance of honey surplus from the colony but leave it all to safeguard spring buildup and spring strength for pollination. Over there the average per colony production does not run over 20 or 25 pounds.

We are yet a young continent here in North America, but may not this example be a portent of which way the wind may blow in the future? Pollination has definitely entered the picture. Will seed production be mostly by the specialist and beekeeping by the big operator who is equipped to move to the areas where pollination is needed? Or will almost everyone have bees as is the case in Holland? Perhaps a little of both, at least in our generation.

CANADA LEADS THE WAY. Mr. Tom Shields, manager of the Ontario Honey Producers' Co-operative, reported at Biloxi in January that Canada had increased its per capita consumption of honey from 2¼ pounds to 3¼ pounds. Faced with an emergency mainly due to loss of exports, with the help of a Government purchase, an advertising campaign made possible by provincial and Government funds, plus a united effort urging honey producers to sell more of their own honey, Canada has done a remarkable thing.

The per capita consumption of honey in the United States is 1.3 pounds. Were we to increase our per capita consumption of honey 0.1 pound, we would not have a surplus. Were we to increase our per capita consumption of honey by 1 pound to 2.3 pounds, we would not produce enough honey to meet the demand by 130,000,000 pounds Wake up, United States beekeepers! We can sell this delicious, wholesome, natural sweet—honey!

Why Honey

by John W. Holzberlein, Jr.

WHEN writing or talking on economics I feel a bit "out of character," for I am a honey producer, not an economist. But unless we honey producers heed some of the principles of economics we are not going to remain successful honey producers for long. There seems to be a great deal wrong with our industry, but there isn't much wrong that a better price for honey would not cure. Production methods are being improved. Controls of bee diseases are being perfected. Farmers are learning to use insecticides that are less toxic to bees. In fact we seem to be facing an era of better production, an era where the annual crop may be expected to exceed the once normal 200 million pounds almost every year. But it will avail us little as producers if we continue to produce honey at a loss or if the government must continue to subsidize our industry.

At no time in our memory has honey been so cheap. Some of you will want to take exception to this remark. Many already have. But I believe I can prove its truth. For the sake of a base figure let us say that honey is worth 10c per pound. Little honey in the West has brought that figure on a bulk wholesale basis the past two years. However let us use the 10c price as an average of what a pound of honey is worth today. How many beekeepers can produce honey today for 10c. My guess is that not more than one in ten has or can produce honey consistently for 10c per pound under present conditions. The national average crop per colony for recent years is around 40 pounds per colony. But we (those of us who will read this article) are extra good honey producers, careful operators in good locations, and our average is twice the national average or 80 pounds. Is it? Can you operate a colony for a year; extract and package the honey; service your equipment; replace wornout and obsolete items at today's prices; keep up your bee stock; drive a modern truck; and return your help and yourself wages that are comparable to those paid in other industries for $8.00 per colony? If you can, you are the one in ten I spoke of earlier.

Granted that honey is worth 10c let us make some comparisons. What do beekeepers buy? They buy shoes, overalls, and haircuts to mention a few personal items that they must have. They also buy brood frames, paint, and trucks to mention a few items necessary to the business. A good pair of shoes costs from $8.00 to $12.00, a pair of standard quality overalls costs $2.65 to $3.25, and a haircut about a dollar. Ever figure how much 10c honey it takes to pay for these items? Now let us look at the other costs. Brood frames for example are variously quoted at $7.55 per hundred to $13.00. Paint, an item much used by beekeepers sells at $4.50 to $6.00 per gallon. And trucks, depending on where you live and what you buy, cost from $2,000.00 up. What do you pay for help? I pay an experienced man $250.00 per month, and he is worth it. He can earn as much or more in fields where he has little or no training. Yet in the late '30's that man was working for $45.00 per month and came to me for $50.00. Of course his ability has increased —but not five times. And while it was easy to get part time help ten years ago it is next to impossible to get help of any kind during the short busy season when all farmers need extra help. Why take all those stings and lift those heavy supers when almost any farmer will pay $8.00 for riding a tractor?

Now let's look back. At the time when honey was at its lowest (we took 4½-5c for good white honey for several years) we were surrounded by $3.00 shoes, 75c overalls and 25c haircuts. Brood frames were $3.50 per hundred, paint was $2.00 per gallon and you do not have to be a grandfather to remember when a new Model T. roadster sold for $260.00. A 1½ ton truck that today sells for about $2,200.00 could be bought 15 years ago for around $900.00. Haven't times changed? Food items, where honey takes its place, have advanced about like the items mentioned above. Butter which sold at 25-30c when honey was 4½-5c now sells for 75c per pound. The difference in coffee is even more. Commercial jams and jellies which are now honey's closest competitors have taken a rise almost in line with butter and have gained in popularity. Honey has not kept up. Nor have we honey producers kept up with what was going on. We have sat back and in most cases just took what our honey brought.

Prices Must Rise

We felt like millionaires for two or three years while we were taking advantage of a national calamity, and now find ourselves in many cases worse off than we were before the war because the price of our product is in worse ratio than it was at that time.

And now let's look ahead. We hear the remark often made that things will adjust themselves. That other prices will come down and that once again we will find our proper place. Note that word "find." We too often expect to find something. I sometimes think it is a part of a beekeeper's philosophy that what he has to sell he "found," or his bees found it, and whatever he gets for it—he is just that much ahead. A two-hive backlotter with a steady job somewhere else to rely on, may figure that way. But the men who produce the large share of our honey that goes through the regular channels of trade know better. They are, or should be, business men who keep account of costs. They know what the score is. Let us quit kidding ourselves about other prices coming down. They may come down a little, they have already come down some, but they aren't coming down much. How can they? The demands of labor alone are enough to keep the cost of manufactured items high. Raw materials, too, are affected by labor. But more than that the very economy of our nation demands high prices! And that means a cheap dollar. The only way we can keep pace is to get honey prices back up where they belong. All we need do is to look at the parity figure to see where the price of honey ought to be.

And why must prices remain high? Why will we never return to the "good old days" of 40c steaks and two-bit haircuts? Our national debt could never be met, that is why. Our economy is becoming more controlled. It has to be. We have another costly war to pay for now. And more services of government are demanded each year. Where does the government get the money to finance these costs? Two places, taxes and borrowing. Higher taxes are constantly being resisted, so we borrow more and more and the debt increases from year to year. But borrowed money earns interest, and our popular "E" bonds which cost us $75.00 will return us $100.00 in 10 years, provided we have any left when that time comes. How else except by keeping prices high and the dollar value low, and lower, can the government meet these obligations?

What can we do? We have already taken one obvious step. We have joined the ranks of subsidized farmers. In that way the price of our product will be raised to something more than the 50% of parity which is about where it lies today. But that should be only an expedient. Seventy-five per cent of parity would be no more than fair support and the government should have to purchase little honey at that level. Honey is produced in such small amount that even with the better production methods that are gradually becoming common it should not often be found in surplus. But we honey producers cannot continue our passive attitude, and merely sit and hope for things to get better. Honey need not be dirt cheap. It once brought a price that compared with butter. Cheaper sweets have crowded themselves into the market and through quantity production, stabilization of quality, and the use of advertising have gradually shouldered honey aside. To regain our lost position we must take a page from their book and follow some of these procedures just mentioned.

There is no doubt that beekeepers have the versatility, the skill, and the faith in their industry to produce ever increasing crops of honey. But new skill and new techniques of marketing must be developed and developed soon if we are to maintain our rightful place in the national price structure. Much of the work necessary to get honey back in line must be done by the packer and seller of packed honey. But since approximately half of our national crop is sold direct by the producer, who himself is also a packer, we need not try to place all the blame for present conditions on the packer alone. Many of our present woes are due to the tendency of the small, part-time packer to again and again meet sales resistance with a lower and lower price. This in turn forces the large buyer-packer to purchase honey for less or find himself priced out of the market. There must be other ways of meeting consumer resistance to our product than by continuing to lower prices. It is even questionable if it does much good in stimulating demand. Those of us who furnish that half of the nation's honey, the 100 million pounds or so that goes through the hands of the so-called legitimate packer and the regular channels of trade, can do our part by insisting on a fair price, and by using methods that may have to be developed to fit the case with our producer-packer friends. Education and organization can overcome many of these ills. They take time and effort. But if our industry is to remain one of self-respect in which one can be proud to see his son follow him, this effort must be made and the time is now! Now, while price support is with us, before limitations on crop are established, let us set about our rehabilitation and get the price of honey back up in line with the things we need to buy.

How-to-do-it

Cleaver for Cutting Comb from Frames

We have a few combs to cut out nearly every year, due to moth work or too much drone comb. We do not have the means of melting the combs in the frames, so we cut them out before melting. A small meat cleaver is a very handy tool for cutting the comb. It beats a knife, especially in tough brood comb and for breaking the wires. Frames can be scraped as clean with it as with a knife, and it doesn't require as much effort, as the weight of the cleaver aids in the work.

Repellent and Residual Effect of Some of the New Organic Insecticides on the Honey Bee

by M. A. Ghani and Frank A. Shaw,
University of Massachusetts

Introduction

Different views have been expressed regarding the repellent effect of some of the new organic insecticides to bees. Annand (1946) reported that "when alfalfa was treated with DDT, the bees stayed away for two or three days then returned and worked the blossoms vigorously as though no insecticide had been applied." Linsley (1946) did not find any evidence that any significant number of bees were killed when alfalfa was dusted with DDT. On the other hand, Dyce (1947) stated that when DDT is applied to plants and trees when in blossom, losses of bees are as severe as from arsenic. Rockwood and Reeker (1945) observed that whereas 5 per cent DDT killed several species of insects, no dead bees were observed under hairy vetch. He did not record any decrease in the number of bees working on hairy vetch. Michelbacher et al (1944) found abundant bees with no perceptible injury in alfalfa fields treated with 3 per cent DDT dust at the rate of 28 lbs. per acre.

In order to study the repellent and residual action of some organic insecticides to bees, small scale experiments were carried on at the University of Massachusetts apiary during the summer of 1948.

Material and Methods

A. To test the repellency of DDT and parathion to bees, 5 bouquets of fresh dandelions, each consisting of about 40 flowers, were placed in tin cans half filled with water. These were given the following treatments:

1. DDT spray—0.116 per cent.
2. Parathion spray—0.054 per cent.
3. DDT dust—5 per cent.
4. Parathion dust—0.5 per cent.
5. Check (untreated).

An atomizer and a hand-duster were employed for the application of these insecticides. Care was taken to give a complete covering of the materials to all the flowers. The bouquets, after treatment, were randomized on an improvised wooden stand about 5 feet long and 1½ feet high. The number of bees visiting each of these in a half hour period was recorded by means of hand-counters. After every 30 minutes, bouquets were again randomized and next set of counts taken. Four or five such half-hourly counts were taken each day for 6 days.

B. To study the residual effect of DDT, parathion and benzene hexachloride on bees, 7 bouquets of dandelions or ragged robin flowers were treated as follows:

1. DDT spray—0.116 per cent.
2. Parathion spray—0.054 per cent.
3. Benzene hexachloride spray—0.120 per cent.
4. DDT dust—5 per cent.
5. Parathion dust—0.5 per cent.
6. Benzene hexachloride dust—1.5 per cent.
7. Check (untreated).

Bees visiting these bouquets were captured and kept in separate gauze cages in a room and fed on sugar sirup. Care was taken to collect only those bees which had worked on the flowers for at least 5 seconds and not those which alighted and flew away without working on them. Knockdowns and mortalities in each cage were recorded after definite intervals until all of them died.

Data and Results

A. Repellency of DDT and parathion to bees.

The average half-hourly visits on treated and untreated bouquets along with the percentage reduction in visits as compared to check are given in Table I.

It will be seen from Table I that there was 36.8, 43.0, 52.9 and 52.5 per cent reduction in the number of visits as compared to the check in the case of DDT and parathion, sprays and dusts respectively. The reduction was more marked in the case of dusts than sprays. Out of all these treatments, DDT spray showed the

Table I
Effect of DDT and Parathion on Bee Visits

Treatments	Average Number Observations Bee Visits in 30 Minutes I	II	III	IV	V	VI	Total	Percentage Reduction as Compared to Check
SPRAYS								
DDT—0.116%	21.3	10.8	13.0	19.7	12.0	15.0	91.8	36.8
Parathion—0.054%	17.7	7.6	11.3	15.3	16.0	14.7	82.6	43.0
DUSTS								
DDT—5%	17.0	9.0	10.0	15.3	6.0	11.3	68.6	52.9
Parathion—0.5%	15.3	11.2	8.5	12.3	12.0	9.7	69.0	52.5
Check	27.0	16.8	23.3	33.0	25.0	20.0	145.1	

Table II
Effect of DDT, Parathion and Benzene Hexachloride on Bees

Treatments	To'l No. of bees	Knockdown (percentage) 1-hr.	6-hrs.	24 hrs.	48 hrs.	72 hrs.	100 per cent mortality
SPRAYS							
DDT—0.116%	35	14.3	22.9	40.0	54.3	62.9	9 days
Parathion—0.054%	38	44.7	97.4	100			21 hours
Benzene hexachloride—0.120%	13	46.2	69.2	76.9	76.9	76.9	4 days
DUSTS							
DDT—5%	42	35.7	57.1	61.9	78.6	83.3	7 days
Parathion—0.5%	39	56.4	87.2	97.4	100		2 days
Benzene hexachloride—1.5%	15	26.7	46.7	66.7	66.7	66.7	5 days
CHECK	62	0	0	3.2	9.7	11.3	Less than 50% in 9 days

least amount of reduction in visits. However, there was very little difference in DDT and parathion dusts.

It may be stated here that though there is appreciable reduction in visits to bouquets treated with these insecticides it is extremely doubtful whether this repellent action alone can be considered as sufficient safeguard against indiscriminant and unjudicial use of these chemicals, especially when large-scale sprayings and dustings are undertaken.

B. Effect of DDT, parathion and benzene hexachloride on bees.

Knockdowns of bees after 1, 6, 24, 48 and 72 hours and time required to obtain 100 per cent mortality are given in Table II.

Table II shows that DDT and benzene hexachloride sprays and dusts gave 62.9, 76.9, 83.3 and 66.7 per cent knockdowns, respectively, in 3 days while it took 9, 4, 7 and 5 days respectively to get 100 per cent mortality.

Parathion spray and dust gave a very quick knockdown, 97.4 and 87.2 per cent of the bees were down in 6 hours and all died in 24 and 48 hours, respectively.

DDT dust was more toxic to bees than DDT spray, while parathion and benzene hexachloride acted a little more slowly as compared to the sprays.

In the case of check, a knockdown of 11.3 per cent was recorded in three days while less than 50 per cent of the bees died in 9 days—the maximum period for which these were kept under observation.

Summary and Conclusions

Small-scale experiments were carried out to study the repellency to bees of DDT and parathion, 0.116 and 0.054 per cent sprays and 5 and 0.5 per cent dusts, respectively, by treating the dandelion flowers with these insecticides and recording the number of bee visits to each.

A reduction in the number of visits to all treated bouquets was observed. Dusts seemed to be more repellent than sprays. However, it is doubtful whether this repellent effect of these insecticides can be considered an adequate protection to bees against the unjudicial use of these chemicals.

The effect on bees of DDT and parathion sprays and dusts in the concentrations noted above and of benzene hexachloride spray 0.120 per cent and dust 1.5 per cent was studied by capturing bees working on flowers treated with these chemicals and recording their knockdowns and mortalities. It was seen that with the exception of parathion, where all the bees died within 48 hours, these could live for a fairly long time, varying from 7-9 days in case of DDT and 4-5 days in the case of benzene hexachloride.

The Cover Winner

Paul Hadley

Temple, Pennsylvania

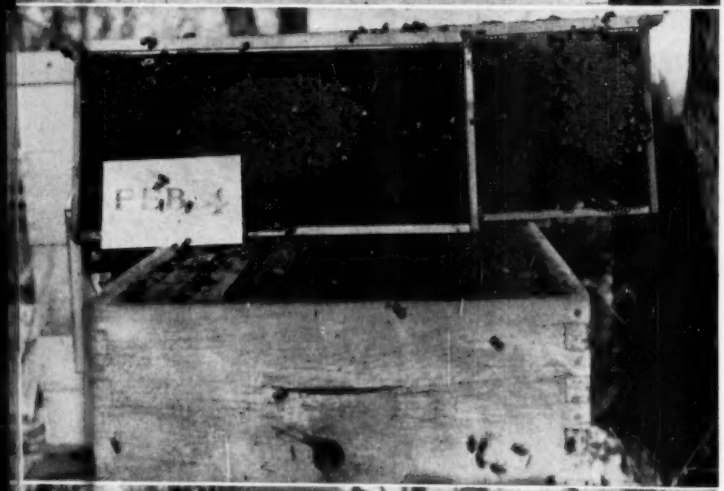
Paul Hadley, like some of the rest of us, has no photograph of himself, so we will have to dispense with that part of this story about our April winner. The picture on this page is another Hadley photo from our files. He specializes, as far as beekeeping is concerned, in the photography of pollen and nectar bearing plants. In writing about himself, he says "I am not a beekeeper, merely a photographer who makes his living furnishing photos and short articles for magazines. I have a great many flower photos . . . " We have used Hadley illustrations for years and have no doubt that we will continue to get more from him. Since he is a subscriber to the Journal, he seems as eligible to take part in this contest as any other subscriber.

The cover picture this month is a striking composition of peach bloom. The picture on this page shows the flowers of sweet pepper bush **(Clethra alnifolia)** which grows abundantly in the flat, sandy barrens along the Atlantic coast. It is often a source of considerable surplus honey. Congratulations, Paul Hadley. Try again.

Picture Contest

These are two fine pictures in this issue (Cover and Break Page). Who will be the winners for May? For the cover picture, the winner will receive ten dollars; for the Break Page, five dollars. Any other pictures kept and used will be paid for at regular rates. Not more than two pictures sent by the same person will be used during the year for the cover; and not more than two from the same person for the Break Page. All payments will be made following publication.

Don't send small pictures since they do not enlarge well in making engravings. If you have a small picture you think will do send the negative. If the negative can be enlarged, it may do. Pictures should be sharp and clear with good detail and composition. Try for something of unusual interest. Don't choose the everyday, commonplace picture. Try for the unusual, off-the-record subject. Pose them if you have to. It is a good test of skill.



Inspection

Last March in his article "When Does Brood Rearing Begin?" Mr. Rahmlow showed a picture of brood in a colony on February 5th. In the present companion article, he shows one of brood in a colony this year on February 4th. He concludes that bees properly fed start new brood for new bees almost in midwinter and that is good—not bad as we have long thought. Winter examination to provide stores to continue this brood rearing will pay dividends. Although this article is perhaps a month late, make the most of it for next year.

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IN the March 1949 issue of the American Bee Journal (page 124) we discussed the question, "When Does Brood Rearing Begin?" Pictures of the amount of brood present on February 5, 1949 were shown.

On February 4, 1950 we wondered if the amount of brood present this year would average the same as last year. January 1950 had an average temperature of 20.5°F. which was 4 degrees warmer than January 1949. There had been several relatively warm days and also some below zero. On January 14, 1950, the day on which the queen laid the eggs that produced the bees which hatched on February 4, the temperature, according to the U. S. Weather Bureau in Madison, Wisconsin, was a high of 24°F. and a low of 4°F.

Availability of Food Supply Important

We asked Dr. C. L. Farrar, of the Central States Bee Laboratory, if he thought the higher and more variable temperatures would have much effect on colony condition. His opinion was that the variation in temperature does not affect brood rearing very much because it is more dependent

•

Many beekeepers worry when the regular bottom board entrance becomes clogged in winter and temperatures go up so bees might have a brief flight. This problem has been solved by the one inch auger hole entrance to the winter brood chamber.

As shown in the top picture, bees enjoyed a flight in the sun when thermometer registered 32° F. at Madison, Wis.

The middle picture was taken on February 4, 1950, with the temperature at 32°F. Frame on left has brood and some pollen but no honey. Frame on right which was next to it contained pollen and a small amount of honey. There were two frames with brood. More honey than shown here is needed on each side of the brood combs to prevent starvation before April.

The bottom picture, is from the article last year, showing frames of brood on February 5.

Now—May Save Colonies

by H. J. Rahmlow

upon colony population and condition, and the availability of honey and pollen to the winter cluster.

We Inspect Colonies

February 4, 1950 turned out to be a bright, clear day with a temperature of about 32°F. at midday. The bees enjoyed a brief flight although it seemed to us they weren't too interested in it, perhaps because there had been other flying days in January. Checking several colonies, it appeared they averaged two frames with good-sized patches of brood as shown in the picture. Some colonies had eggs and larvae in a third frame. This amount of brood was much the same as we saw on February 4, 1949.

A study of the picture of the brood comb reveals some important facts. The comb at the left contains brood with an area of pollen (upper left) but no honey. The comb at the right has both honey and pollen. Food being available (although here in a small amount) brood rearing will continue at a maximum rate. **Will the food available to the winter cluster—that food which can be covered by the bees during very cold weather—last until spring?** The answer to that question is the key to all winter losses in the northern states.

Weather being favorable, we decided to check as many colonies as possible to see if any were in danger of starvation. Out of a total of 52 colonies checked, we found 6 which did not have sufficient stores **within the cluster** to last until April, when most beekeepers first check their colonies. Frames of honey were placed on each side of the two frames of brood in each of these.

We also found 3 colonies in which the brood nest was in the second or middle brood chamber instead of in the upper one. These colonies would no doubt survive if there were sufficient stores within the cluster area or, in a mild climate, where the bees could bring honey down from the upper chamber. In this climate, however, where it is possible to have long periods of zero weather in February and even in March, it isn't safe. We moved the brood into the top chamber where it was flanked by plenty of honey.

Does Winter Inspection Pay?

It could of course be said that if we had properly arranged the winter brood nest last October, placing two partly empty combs in the center of the upper brood chamber, with all other combs full of honey, and about half of the combs in the center chamber partly or entirely filled with honey, we would not need to check the colonies in winter. That is true, but human nature being what it is, no doubt many of us will fall short of perfection for some time to come. In this case the colonies short of honey within the cluster area were among the strongest and had brood in three combs. They were worth saving and we felt well paid for the time spent.

Winter Inspection was discussed at a district beekeepers' meeting on February 6. Several beekeepers said they had inspected colonies on February 4 and 5, one reporting four colonies already starved.

Learn to Know the Bees

While it will pay to save colonies at this time of year, that in our opinion is not the greatest value to be gained by midwinter inspection. The only way to **learn about the ways of the bees** is to look—to study them. Have you ever heard a statement like this: "Anyone who knows the ways of bees knows that if they are disturbed in midwinter they will start to raise brood and surely die before spring." That idea still prevails and we wonder how such a false impression ever became fixed in our minds. We have been inspecting colonies in midwinter ever since Dr. C. L. Farrar, some years ago, first pointed out how bees really live during winter. It has been most interesting and convincing. We find the colonies look the same and act about the same in February as in March or April. By inspection we have learned how to prepare colonies for winter by placing the stores in the right place in the fall and, still more important, we have learned that it pays to supply normal colonies up to 80 pounds of honey for winter and to keep them supplied with pollen or supplement for continuous brood rearing.

We find our present unpacked colonies, properly provided with food, will average stronger for the honey-flow, with less winter loss, than did our colonies in years past when we packed and wrapped in a number of ways.

Discussion as to the best methods of wrapping and packing will no doubt go on, but we will continue to have winter losses and colonies will fail to build the large populations necessary for maximum production from clover in June until we learn that fundamental requirement —**proper feeding!**

Wisconsin.

Answering Your Questions

I have eleven hives which I keep in an apple and peach orchard on Long Island. After the fruit bloom there are not many flowers for the bees to work and the weather is dry and usually hot. What might be planted in the orchard or on a half-acre of land nearby that would give a good honey crop? The soil is sandy with some clay and there are no facilities for watering.

John Gregersen, New York.

For conditions such as you describe, the meadow sage, (**Salvia protensis**, offers good bee pasture for about a month following fruit bloom. The plant will stand a good deal of unfavorable weather and still provide bee pasture.

To plant in the orchard for the purpose of providing soil cover and nitrogen as well as bee pasture, the birdsfoot trefoil is very good. It blooms later than the sage and gives the bees good support during the month of June and early July. It is drouth resistant and a very good soil building crop. We are highly pleased with the way both these plants have grown for us even though there has been some very dry and unfavorable weather.

Jan Swammerdam

Francis Huber

Gaetano Barbo

Johannes Dzierzon

L. L. Langstroth

Century of Breeding

by H. C. Dadant

THE background on which our progress in bee breeding has been built is composed of the advancements and discoveries made by beekeepers and scientific leaders in Central Europe and adjoining countries since the days of Aristotle. Aristotle's work, coming as it did, over three hundred years before the Christian Era stands out as unusual during a period when little scientific work was done. It was known that a queen bee existed in a colony although she was called a "king." It was not until the time of Schirach (1761) and the great work of Francis Huber (1841), both of whom raised queens from worker bee larvae, that knowledge was advanced enough to increase interest in beekeeping.

The microscopical work of Jan Swammerdam on insects more than matched in importance all previous work on the bee. His work began in 1669 and is recorded in the "History of Insects."

The anatomical works of Barbo, of Italy, during the 19th century were circulated among the Latin speaking countries of Italy, Spain, and France, and stimulated much work on the part of beekeepers of the southern European countries. Leaders in Great Britain, among them Frank R. Cheshire, contributed further facts.

Queen rearing, the maintenance of existing desirable stocks, and elimination of inferior ones began during those periods. It was proved that the transfer method of larvae 48 hours old from worker to started queen cells would result in normal queens.

Complete and needed information on anatomy was supplied to the industry in 1925 by the valuable book, "The Anatomy and Physiology of the Honey Bee," by R. E. Snodgrass. This made possible and was just previous to the beginning of artificial breeding.

The existence of the three castes, the queen or perfect female, the worker or undeveloped female, and the drone or male, together with the knowledge of parthenogenesis discovered by Johannes Dzierzon in 1845 and others, completed the knowledge necessary for successful commercial methods of queen rearing and stock improvement. Parthenogenesis has been a most important discovery, since in stock improvement we can take advantage of the fact that the drone hatches from an unfertilized egg and is the son of the queen that laid the egg, entirely unrelated to the drone with which she mated. This is of value in breeding today since drone mothers may be provided in any number near a commercial mating yard without regard to the individual or line with which the drone mother is mated.

After 1850 great improvements occurred in rather rapid succession. The industry was now blessed by the experiments and written works of Moses Quinby and L. L. Langstroth, and more particularly by the invention of the movable open top frame hive and establishment of the bee space by Langstroth. These two great men met the challenge of the need for a better or modern beehive. They also pointed out how a considerable number of queens could be produced from a choice colony by making it queenless and producing queen cells in it to be distributed among needy colonies.

Good combs were not easily produced from bees under natural conditions. In 1857, Johannes Mehring, of Germany, advanced the idea of producing a comb foundation or comb base with suitable flat dies which was well received and later improved upon by the use of hand driven and power driven roller mills.

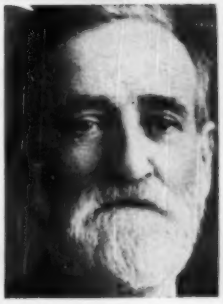
The production of practical and convenient equipment was now developed and the number of beekeepers was increasing rapidly. Better lines of bees than existed in the United States at that time seemed necessary since they were largely a bad tempered black race. Importations in 1850 from Dzierzon of Germany did not prove satisfactory. Importations from Italy in 1860 of the famous Italian race were the basis of a new era in beekeeping in this country. Although quite a percentage of the arrivals were lost, what remained enabled Quinby to begin producing Italian queens in 1861.

The most successful importer was Charles Dadant, who after indifferent success, made a second trip to Italy in 1872 to complete arrangements that became very successful. As many as 400 Italian queens were imported in one year with little loss and were widely distributed.

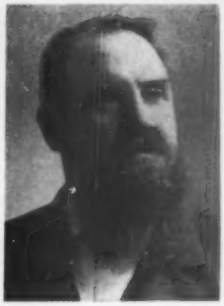
With the needed equipment and desirable bees now available, the industry seemed well prepared for rapid increase and development. The imported Italians of those days would compare well with the best we have today. Records of the crops of the '70's and '80's by producers whose colonies were headed by daughters of the imported stock, leave no doubt as to their quality.

Importations from Italy continued and provided fresh lines unrelated to those previously secured. The danger of inbreeding was, therefore, eliminated. The beekeeper was able to buy daughter queens of good quality from more than one importer. Bees were not plentiful in all parts of the country in those days and the danger of mixing the

Charles Dadant

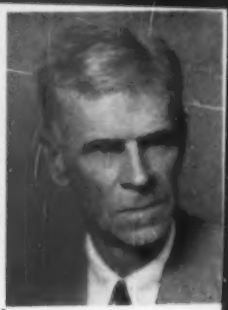


Henry Alley



G. M. Doolittle

L. R. Watson



R. E. Snodgrass

Italians with the black bees was not a problem in most localities.

Queen rearing progressed rather slowly in a semi-commercial way for a number of years. Advertisements in the only bee journal in America at that time, the American Bee Journal, offered queens of purely mated Italian stock. There seemed to be no problem of maintaining the best qualities of Italians in succeeding generations.

Importation of other races, however, began in 1866 and the Egyptian, Cyprian, Hungarian, Tunisian, Carniolan, Caucasian, and others appeared. All but the last two proved to be a hindrance to stock improvement. Frank Benton, head of the Division of Bee Culture at that time, devoted years searching for other races in foreign countries. The Caucasian proved to be his most valuable discovery. The Cyprians, imported largely by Benton and D. A. Jones, of Canada, were quite attractive due to their bright yellow color, but they interfered with progress in breeding due to their undesirable traits of excessive swarming and bad temper. They possess some good qualities, as they are very prolific, active in the field and winter well. These factors could be incorporated in a "new bee" by crossing them with Italians.

Years were virtually lost in the elimination of the objectionable hybrids of that time. The only races that have stood the test of time are in the order of their importance: the Italian, the Caucasian, and the Carniolan. These have not been kept entirely separate and the Italian race continues to dominate the field.

Early in the twentieth century, as the number of beekeepers increased along with the population of the country, the demand for queens became sufficiently great to induce queen rearing to move into the southern states where commercial possibilities could be fully realized. The First World War period caused a great increase in the demand for honey, and the value of sweet clover and alfalfa in the rotation of farm crops was realized, thus promoting greater demand for improved bees.

Queen rearing followed at first the natural method of production of queen cells by colonies preparing to swarm. The producer of queens for his own use and for sale could use his best colonies to produce queen cells. A colony with a high record for honey production preparing to swarm is in prime condition for the production of good queen cells. This condition can be duplicated by the queen breeder when he dequeens his choice colony, although the colony preparing to swarm is probably better.

It has been shown by reliable investigators that the composition of the larval food secreted by the nurse bees for queen larvae during the first two days of growth is lower in protein and fat content than is food secreted for worker larvae. The analysis of larval food is probably not complete, but there are no doubt other differences such as the quantity of vitamins and minerals. Whatever the composition, the queen larvae receive by far the greatest quantity of food.

Although larval food had not been analyzed previous to 1883, Henry Alley and a few others at that time believed that the best queen-rearing method was the old system of rearing larvae direct from the cells in which the eggs were laid. It seems reasonable to conclude that larvae that are destined to become queens from the first minute they are hatched, should be fed continuously by nurse bees previously aware of the fact that they were to feed queen larvae, not larvae destined to become workers. Alley recognized that the queen cell-building urge, so apparent in the colony preparing to swarm, should be duplicated in commercial queen rearing in order to provide the best of well-fed queen cells from the minute the egg hatches until the larvae is sealed. His cell-building colonies consisted of a large number of bees shaken from a strong colony and kept in a dark, cool, ventilated box for about 12 hours. They were then reinstalled on the original location in a hive body containing about half the usual number of brood-less combs of honey and pollen. At the end of that period the bees not only were fully aware of being queenless but they were preparing to secrete royal jelly in abundance for the purpose of raising a number of queens as soon as hatched eggs were available. The cell-finishing colony was then supplied a strip of newly built comb containing newly hatched larvae from a choice colony. The strip of comb was cut down to about one-half depth and every alternate cell destroyed in order to provide suitable room for a row of queen cells.

The above method should be accompanied by the addition of thin honey in a feeder located beyond the reach of robbers, as Jay Smith has explained in his latest method of queen rearing, since honey is preferable to sugar sirup.

The grafting method of rearing queens was advanced by G. M. Doolittle, of New York, in the '80's and soon became the leading commercial queen-rearing procedure.

The grafting method of Doolittle is well known. Very young larvae hatched from eggs laid by a picked breeding queen are transferred with a hand tool to artificial queen cell cups. These cells are usually started in a queenless swarm box overnight and placed in the second story above an excluder in cell-finishing colonies the following day. Cell-finishing colonies doing good work in feeding and finishing the cells above an excluder, surrounded by frames of young larvae raised from the queen-right hive body below, are constantly aware of their function to feed queen cells the proper royal jelly so that

(Please turn to page 182)

Management of Bees For Pollination

by H. L. Maxwell

WE do not manage bees solely for pollination. Our pollination service is subordinate to our prime objective which is maximum honey production. Work in this field is restricted to the lease of bees to fruit growers, though we cooperated with a county agent this past season in red clover pollination experiments. Our experience in supplying orchardists with bees dates back to the late '30's, and during this time we have moved over 12,000 colonies into and out of orchards. Our gross income therefrom has been around $40,000.00; but after accounting for expenses, this figure melts away and only meager wages remain, and we are left with a vivid memory of the many sleepless nights, the unbroken work schedules of 20, 30, 40 or more hours . . . But, since commercial beekeeping in Virginia is extremely precarious from the standpoint of assured profit, the income from orchard rentals is a welcome addition.

The best way to describe our pollination work is to give a running commentary on seasonal work in detail up to the time when the bees are ready to move to the orchards. During 21 years in commercial beekeeping, we have gradually evolved the fact that our new year, in good colony management, should begin roughly around September 1. Our over-all objective is to have around 2,000 colonies in top condition by the first of the next June.

A good, overwintered colony is our best assurance of a honey crop, so on the first of September in an average colony, we want a vigorous queen, 8 or 10 pounds bees, and 40 to 50 pounds minimum of honey and pollen. Fall plants here yield an abundance of pollen, but we regularly expect to supplement stores by feeding, though a food chamber is left on all colonies. We winter in one and one-half and two stories, and feeding is done in inverted 10-lb. pails. We like to get all fall feeding done by September 20 when a highly variable fall flow may start. The time element will not permit us to wait for it, as we want vigorous brood rearing in this month so as to have a strong winter cluster.

Two trips complete our feeding program, and queens are then introduced to colonies already marked during the feeding inspection, when the light fall flow reduces the robbing hazard, makes colony inspection easy, and assures safer introduction. We requeen about 25% of our colonies each year, and another 25% to 40% are replaced through supersedure or occasional swarming. We prefer to do most of our requeening in the spring in the three or four weeks before the main flow.

The spring inspection can start normally around March 1. Some emerging brood can be expected, and all colonies are pushed by sirup and pollen substitute feeding until fruit bloom, usually due April 10 to 20. Booster packages are taken from strong colonies to assist weaker ones, or divisions are made to make up winter loss or for increase. By early April, we can expect to have brood in five to six frames as an average colony condition, with an estimated average of four pounds or better of bees. We want all colonies constantly on the "up-build" until our main honeyflow, nine to ten weeks later—when, with addition of supers as needed, most of the bees will go right on through the flow with a minimum of swarming.

To return to our fall schedule, our colonies are wintered on 16' hive stands, 8 colonies to a stand, placed in pairs. We use an auger hole in the front handgrip for a top entrance—and are sorry we ever damaged our equipment to that extent. We prefer an entrance reducer made of ⅛" hardware cloth, with a horizontal opening ¼"x4" clipped and folded back at the bottom for ingress and egress of the bees. These can be left on the year around, although we remove them in summer.

Another wintering help, we find, is to reverse all inner covers, so as to allow more clustering space for the bees over and around their winter stores. (This must not be done until after the fall flow, or heavy burring may result.) Then, we place the inner cover block, which is ⅜" thick, on top of the side of the inner cover with the warmest exposure, replace the telescoping outer cover, and add a four or five pound weight to hold it on

H. L. Maxwell and sons "Lit" and "Brit." This truck will haul 200 one-story colonies.

An ideal apiary site facing east under the brow of a hill with a stream below. The medium truck has 100-colony capacity.

Excess increase from other apiaries is unloaded—100 new colonies —and another apiary is established. Lit enjoys the outdoor work.

After the honeyflow—a fifty pound average is a very good crop here—this one was a little better.

in strong winds. We find this procedure helps materially in clearing the hive of condensed moisture, and we no longer have dripping hives, molded combs, or as severe cases of dysentery as formerly.

Our bees are put away for the winter by the last of October, and we keep our fingers crossed until the first warm spell in late January or February when we will inspect for winter losses, and stop up or pick up any dead colonies and bring them into the warehouse for safekeeping. Allowing these colonies to be robbed out may spread disease or incite general robbing. Also, if caught early, the stores can be saved and used for increase in the spring and thus replace the winter loss more cheaply.

We are never through in the bee business. The remainder of the year is a catch-all period, painting, repairing or assembling new equipment, wax rendering, installing foundation, steam-cleaning frames, etc. During this time, we also wind up the sale of our crop. But that is the easiest, as we have always been able to sell more honey than we could produce.

The final and most important phase in getting bees ready for pollination begins around the first of March when all brood nests are inspected, and any colonies below par are marked for attention. We start a stimulative feeding program for all colonies except those marked "weak," as these must first be given a booster package and possibly a new queen. Our apiaries east of the Blue Ridge are fed sirup only, but in the Shenandoah Valley we also feed pollen substitute, as these apiaries are 200 miles north and also on the west side of the mountains. Their brood development is usually around 3 weeks behind colonies in the Lynchburg area.

If many weak colonies are found, early booster packages from the South are added, and recovery is amazingly quick. All colony strengthening is done with booster packages. We never transfer brood. A normal colony already will have under development all the brood it can take care of; and, too, we can usually shake enough packages from excessively strong colonies to boost the weak ones found in a day's manipulation. Actually, between the two territories in which we operate (for a distance of 275 miles) we easily are able to produce all the package bees we need for equalizing or for increase. We find, too, that a pound of our bees, taken off the brood combs while the old bees are flying freely, and added to a colony in another apiary as late as possible in the same afternoon, is equal in value to 2-lbs. of bees that have been shipped from a distance. Such bees are young, unabused . . . We make increase easily and cheaply, if desired, the same way each spring, hiving the bees on old combs and honey and adding a caged queen.

By the first week in April, a week or two before the main fruit bloom will normally come, our bees will average four pounds or better per colony, and **these will be young bees** —not the aged, feeble ones that came through the winter. We feel these young bees are the most important accomplishment of our spring operation, aside from building all colonies up to a minimum average strength.

We are now ready for fruit bloom, and all hives are stapled, screened, and made ready for moving. We use two stake trucks, with bodies wide enough to take four colonies crosswise, tiered up four or five high, the two outside rows facing outside, the two inside rows facing each other, allowing adequate ventilation. The hives are held in place with the back gates which are pushed up and tied, leaving the remaining floor area free.

Our biggest season was the movement of around 1,500 colonies, one and one-half and two story. It takes about 3 weeks to complete our moving schedule, the bloom develops at intervals over a period of two weeks as we work north in the valley from Lynchburg. A super of combs is added on colonies that have spurted ahead, as a nominal expectation of 15 to 20 pounds apple nectar usually is stored. At least 30% empty space always should be provided for such developing colonies, as they may otherwise become honeybound, and this severely damages a colony, blocking normal brood rearing and causing it to swarm prematurely. A little carelessness here may cause the loss of the year's surplus from one colony, or several hundred . . .

We do not promise the orchardist a full strength colony of bees. These are only young, developing colonies, averaging a full five pounds vigorous bees when placed in the orchards, and increasing in strength daily. We do not want them to reach a normal strength of 10 to 12 frames brood until several weeks after fruit bloom. Colonies of normal strength in April would be a great liability from merely a maintenance standpoint, nor can they be moved any long distance safely without loss of the unsealed brood which the bees consume for moisture, and the greater surplus of green honey they produce often breaks down or spills out of the cells under expansion from heat, causing wholesale losses.

Discussion

What is your opinion of the direct release method of installing package bees?

—JULIUS LYSNE, Wisconsin.

Judging by these replies, circumstances alter cases. We have to agree, from our own experience. We prefer the direct release but often use quick release when we must use more foundation than combs; or when we have bees going in with strange queens (queens that did not come with the bees). As an oddity in our way we use warm water rather than sirup to wet down the bees. It seems to work well and reduces robbing by bees from other colonies.

George M. Moffit, Ontario . . . .

The direct release method is the best and this is how I do it. Have drawn combs (at least two in each hive) and frames of foundation in place, with inner and telescope covers handy beside each hive. At dusk bring out the packages and place each one on the hive in which it is to be installed. Have warm sugar sirup ready in a spray, with a further supply in a closed container for replenishing the spray. Thoroughly spray the cage from all four sides, so that the cluster of bees is well dampened, pull off the screen from one side with as little disturbance as possible and shake the bees onto the drawn combs. If they pile up, remove a frame of foundation and spread the combs a little to let them down between. Then pull the queen cage out and spray the queen and release her among the bees. Put on the inner cover and release the next package in the same way.

When all are in the hives, put a feeder of sirup over the feeder hole in the inner cover, put on an empty super and the telescope cover and leave them. When they get the next can of sirup the queens should be laying. With this method there's no drifting. The bees are kept occupied for some time cleaning themselves and the queen until dark. I have released packages when someone had to hold a flashlight for me to see.

* * * *

Wayne Keller, Nebraska . . . .

The primary elements in package bee installation are speedy introduction, minimum drifting, and queen acceptance. The dangers of releasing package bees vary with the condition of the bees and the weather. Last season I introduced two lots—the first 25 one cool, windy evening, and the second lot of 20 the next day in a cool rain. In the first lot, alternate queens were introduced by direct release with the bees. These were crippled and later superseded and swarmed with their own bees and some drift that they had picked up by being released first. The twenty that had been introduced gradually, with no queenright colonies to pick up drifters, were uniform and had eggs from their queens promptly. All queens introduced gradually laid before those introduced by direct release, and none superseded nor drew an extra portion of bees.

Where many packages are installed, the time element may prohibit the direct release method, but the extra attention will pay off. It is but a small task to take the screen off one side of the package and dump the bees into the hive.

I leave the queen in her cage, concealing the surface so that the bees will not develop the balling habit, and punching a nail or match through the candy to expedite her release. Place the candy end upward so that the way out will not become obstructed. This gives almost perfect acceptance.

If packages cannot be installed in the evening, the bees may be sprayed with water or fed sirup to keep them from flying until they are established. I would rather paint sirup on the screens than dunk the package in a tub of sirup. Bees need not be dampened in cool weather. I think dampening the bees is detrimental to their health.

* * * *

Julius Lysne, Wisconsin . . . .

We use and recommend a modified form of the direct release method in that the bees are not sprayed with sirup. We think this makes them too sticky. Package bees which have been on the way several days are already introduced to their queen and the bees and queen can be released at the same time. There is no danger of balling, and queens will begin to lay in a few hours.

Packages released on foundation should be fed heavily and pollen should be available to prevent supersedure. If the weather is warm, queens should be confined to the hive for the first day or so with an excluder under the hive or a queen trap. After two weeks, two frames of brood should be added or the bees may build supersedure cells. When the package colonies are strong they may be equalized by taking away two frames of brood and giving them back to overwintered colonies. By this method the two-pound packages will work out very nicely.

Brood rearing should take place in two hive bodies to assure a strong colony in about 60 days. When supers are added, it is a good plan to divide the colony by putting the queen in the top brood chamber over an excluder and giving the bottom chamber a ripe queen cell. This prevents swarming and there is no interruption in egg laying. When the queen in the bottom chamber is mated and laying the two bodies may be united again. A strong field force will be on hand for the harvest.

* * * *

C. B. Eppling, Virginia . . . .

I believe the direct release method is best. Bees should be gorged with warm sugar sirup in the packages before hiving. I remove five frames from the hive, open the package and remove feeder can and queen cage and dump the bulk of the bees on top of the remaining frames, letting some fall on the alighting board. Then I put the package in the hive supported by two half-inch sticks placed on the bottom board. The cover is slid on the hive and then the queen cage is dipped in the warm sirup to keep the queen from flying for awhile. She is released to walk in with the bees on the alighting board. She usually starts laying in about two days, saving the time it would take the bees to release her.

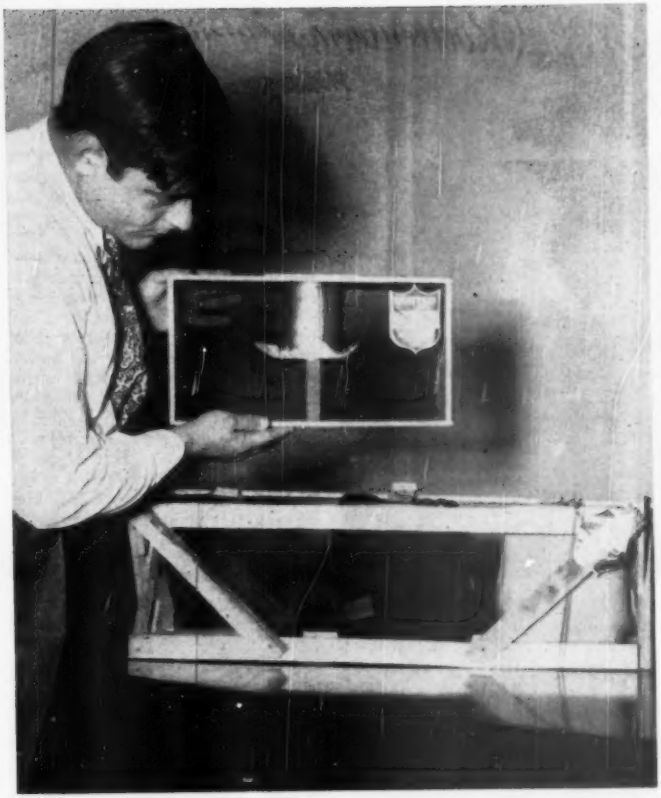
DISCUSSIONS TO COME—

Thanks to all you contributors who are making this page interesting. Let's hear from the rest of our readers on the following questions:

MAY—How and when should queens be introduced?—Julius Lysne, Wisconsin.

JUNE—Do you think the two-queen system increases production profitably?—G. H. Cale, Jr., Illinois.

JULY—What have you found to be your most time-saving short cuts and devices for managing bees?—Steve Taber, Wisconsin and Lloyd Klopfenstein, North Dakota.



Air-Minded Bees

The nation's honey bees are all a-buzz about this newest innovation of the age of flight. As it is becoming more and more fashionable—not to mention practical and economical—to ship bees by air, bee fanciers have been studying ways to improve upon the clumsy old wooden containers. The answer was found in small, feather-light plastic containers perfected by the U. S. D. A. At the request of the Department, United Air Lines flew the new type containers along its coast-to-coast and Pacific coast system—and nary a stinging comment was forthcoming from the apparently satisfied little winged occupants. Not only is the new type container extremely light, but it eliminates the old pan of sugar sirup. After all, even if the bees are flown all the way from San Francisco to New York, they still won't have time to get hungry.

Incidentally, mathematicians are still wrangling among themselves over a stumper—when bees are shipped by air does the total shipment weigh less when the bees are flying around within the containers?

●

R. B. Tennant, assistant superintendent of United Air Lines' cargo transportation service in Denver, contrasts an old container (being held) for shipping bees by air with the new one. It will be not only more economical but will reduce mortality of bees in transit. (Photo courtesy United Air Lines)

Is Milk Test Reliable?

by E. F. Bea

On page 14, January, 1946 issue of American Bee Journal, E. C. Holst explained how to use a milk test in the field for detecting AFB. This consisted, briefly, of taking 20 drops of warm water and placing the water and a scale of the suspected matter in a 1-gram vial. Ten drops of powdered milk solution or five drops of skim milk are then added. This solution is then shaken gently. The test is supposed to be positive if the solution clears up, generally within a fifteen minute period, leaving a transparent pale-yellow liquid.

This would be fine if the test could be relied on, however, I have had the opportunity to try this test on scales which positively show AFB when given a laboratory test, and which do not clear up within fifteen minutes, nor do they clear up within fifteen hours. A number of our apiary inspectors used the milk test and at a later date returned to certain apiaries to burn colonies which the milk test failed to detect.

As I am writing this (February 21st) I have before me a bottle with a diseased scale which was treated according to the procedure outlined in the article "A Simple Field Test for American Foulbrood," which has stood for 48 hours without clearing up. Water from different sources has been used, including distilled water with the same results.

I have knowledge of one beekeeper who relied on the test enough to mix up the supers from a yard which contained several colonies of genuine AFB, simply because the milk test did not clear up. Laboratory tests proved that this yard contained AFB. Perhaps it would be wise, at least for amateur beekeepers to rely more on the laboratory tests, for much disease will be spread by careless handling in areas where the milk test fails to reveal the disease to the amateur. My advice to the beginner in beekeeping would be to send a sample of brood, say 4x4 inch piece of comb to some laboratory for diagnosis.

Quoting from the same article referred to above, in the closing paragraph a personal communication from A. G. Lochhead states: "In any doubtful cases the Division of Bee Culture Investigations of the Bureau of Entomology and Plant Quarantine will gladly make a laboratory analysis of the material." The address is Beltsville, Md. This I believe is a wise method for any novice to follow.

Golden Rain Tree (*Koelreuteria paniculata*)

by Dr. August P. Beilmann

Close-up of golden rain flowers.

●

A really fine ornamental tree of unusual attractiveness to bees is this species from China, Korea, and Japan. It is particularly well named for the brilliant yellow flowers are found "dripping" from every branch tip in late July and early August. It is a tree not likely to exceed thirty feet in height if given enough room to grow. It has the grotesque branching habit of most of the Asiatic species and thus it forms a round headed tree with the lower branches nearly touching the ground. The general growth habit restricts its use to the larger gardens; since it may have a spread greater than the height.

There are very few trees which bear such conspicuous flowers so late in the season. The seed pods resemble small ridged balloons and they are almost as attractive as the flowers. The seeds germinate readily and the plant can be obtained from most nurseries. In the latitude of St. Louis the plant might become a weed, since the seeds which are scattered far and wide, come up in every flower bed. Almost any soil is satisfactory, but the more fertile soils hasten growth and flowering. This tree is quite at home as far north as Cleveland and even hardy in Massachusetts along the coast. Normally it can be expected to produce a few flowers at the age of ten years, while it will be a spectacular plant when fifteen years old; by that time it usually is over fifteen feet tall.

Judging solely by the behavior of the bees, the golden rain tree is a rival of the basswood as a source of nectar. So very few specimens can be found that little is known about the color and quality of the honey. As a small wide-spreading shade tree it has few equals; it is especially suitable for parks and larger gardens, but it could be used as a street tree if given some training. It should be of more than passing interest to the beekeeper since it flowers at a time when so few plants are in bloom.

●

Eighteen year old golden rain tree in full bloom, August 5.

Answering Your Questions

What happens to a queen that becomes a drone layer?

Arley Flich, Indiana.

If a queen becomes a drone layer without the bees perceiving it in time to rear a new queen, then she probably will be allowed to remain in the hive and the colony will gradually dwindle out, as they have no more emerging workers. During the summer they will be so weak as to be worthless. If, however, her weakness is discovered in time by the bees, they will endeavor to rear a new queen from the fertile worker eggs. They will then kill the old drone layer or else the newly emerged queen will do it.

I would like to know the color of red clover honey as I have been getting a reddish-colored honey for the last two or three years.

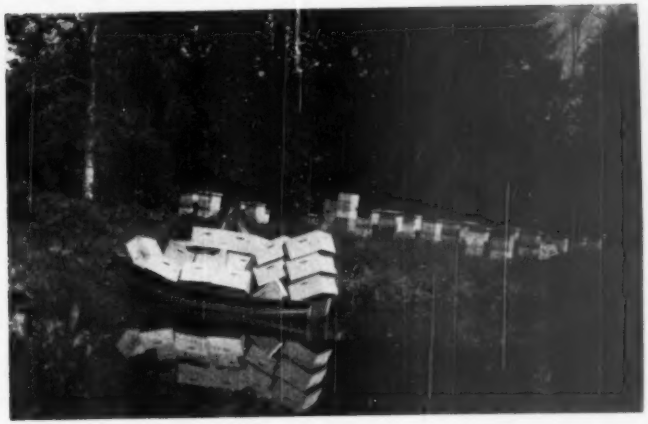
Roy Stadel, Connecticut.

While red clover does not yield nectar to bees except under especially favorable conditions, there is little question but that some substantial crops are harvested from this source. Most beekeepers who have secured surplus from red clover report it as a reddish color, unlike honey from white or alsike clover. Some describe it as amber with a reddish tinge. Your description of heavy body and good flavor along with red coloring agrees with that of many observers. A heavy yield of this honey is not commonly found.

Bees Store Surplus in Flooded Area

by Bevan L. Hugh

THE flood of June 1948 will be recorded as the most disastrous in British Columbia's history in monetary loss, in the loss of livestock, crops and buildings, as well as the loss of many acres of rich alluvial land washed down river into the ocean. Fortunately for beekeepers there was little or no loss of bees, though many apiarists were inconvenienced in having to move bees to higher ground. Low-lying river bottoms including entire islands and towns were inundated for weeks when dikes broke from the pressure of water caused by the late melting of snow and ice from the mountains and plateaus. In normal years the runoff commences in early spring and continues several months without damage, but spring was late and cold in 1948 and the vast watersheds of the mighty Columbia and Fraser rivers, which are ice and snow covered in their upper reaches in winter, released their water in a flood that the river channels were unable to accommodate and left death and desolation in their course. Some fields were twenty feet under water and houses were flooded to their chimney tops or washed downstream, while highways, railroads, bridges, telephone and telegraph wires were destroyed.



The beekeeper is standing in water examining the top super.

A rowboat filled with supers ready for the crop at O. K. Apiaries, Grinrod, B. C.

W. H. Turnbull, of Vernon, Chief Apiary Inspector of British Columbia, reported that his Chief Inspector for the Fraser Valley, V. E. Thorgeirson worked very hard for about five weeks assisting beekeepers to move their colonies to higher ground and was instrumental in saving many colonies in the flooded area. Pictures show beekeeping under difficulties along the Shuswap River at Grinrod where the commercial operations of O. K. Apiaries of Vernon are located. Hives in imminent danger of inundation were placed on empty supers on the dike and as the water continued to rise an additional super was placed beneath each hive. The water again reached the entrances when the flood began slowly to subside.

Hon. Frank Putman, Minister of Agriculture for the Province of B. C., who has an apiary near Creston at the end of Kootenay Lake, moved eleven colonies onto a truck on a dike beside the river. The river overflowed its banks isolating the bees, the nearest land being one and one half miles away. The bees flew to clover on Nick's Island, an area of 2,200 acres, the only dry land in that part of B. C. and during the blooming period brought honey home across the flooded fields. When the water had subsided and it was possible to examine the bees on the truck it was found each colony had filled two supers and averaged 80 pounds surplus honey to the hive.

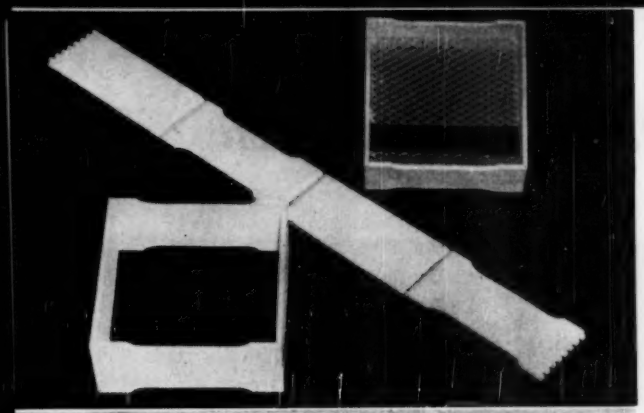
British Columbia.

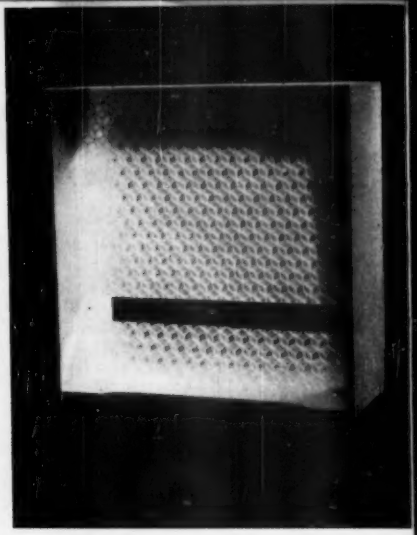
How-to-do-it

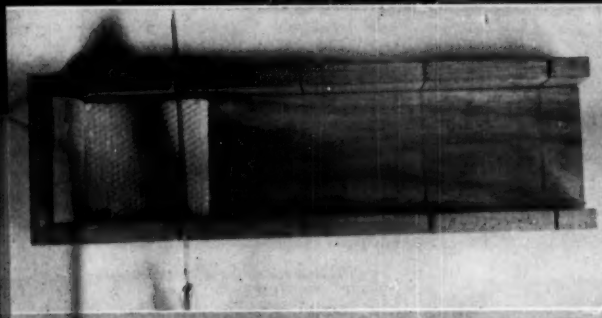
Handy Thumbtacks

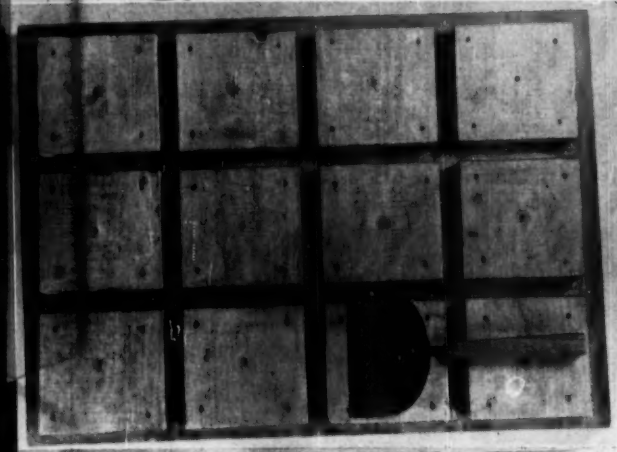
Mr. Bea, of Minnesota, suggests using a bottle for safe keeping of thumb tacks. Why not just stick them on a piece of basswood from broken comb honey sections? I like your new covers, especially January which I now use in teaching to show how bees carry pollen.

Rosena M. Pullen, Michigan.









Get Ready for

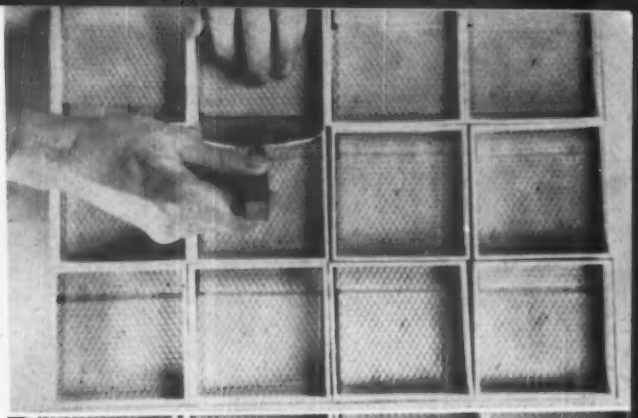
The long fibered, white grooved, basswood section, with dovetailed ends, sized 4¼ by 4¼ inches with scalloped top and bottom edges, is still the favorite for fancy section comb honey. The top and bottom starter of thin, white, surplus foundation makes a nicer finished section of honey than the full length sheet, in the row of split sections (see lower right hand picture) although many prefer the latter because it is easier to assemble.

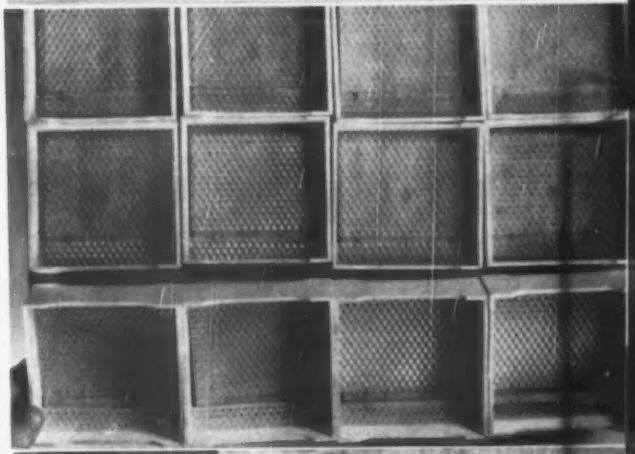
These pictures show, step-by-step, a good way to prepare sections with top and bottom starters for the supers. The center picture above, on this page, and the top left picture above, show the basswood section in the flat, and folded, and two views of the section with the foundation in, ready for the super.

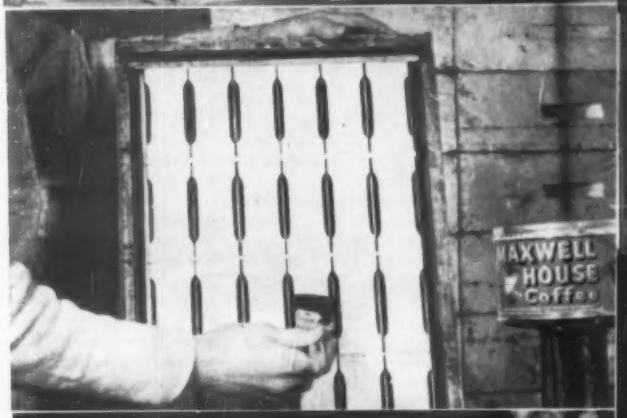
The second picture, at left (just below the basswood section), shows a mitered foundation cutting box. This way of cutting the top and bottom starters and the method of fastening them in the sections, is the procedure used by Carl Killion, master comb honey producer, of Paris, Illinois. Most of the pictures were furnished by him.

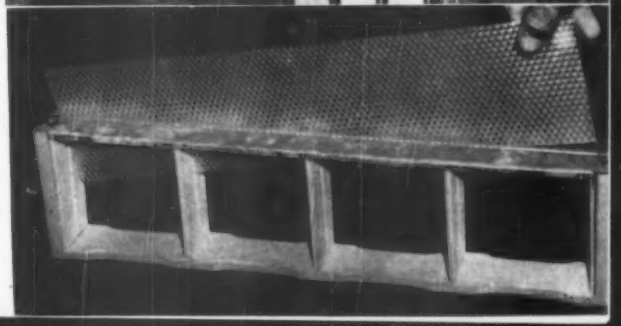
The inch wide block of wood in the end of the miter box places the square pieces of foundation, cut from the long sheets, so the small bottom starter can be cut off with a corrugated bread knife. The large pieces left are the large top starters The picture below the miter box (left) shows the multiple foundation fastening board. The blocks are the right thickness so, when the foundation rests on them to be fastened to the wood of the section, the fastening is made right in the center of the section. The blocks are just right in size so the folded section fits over them easily. The blade for heating the edges of the sections is made of aluminum.

With the sections over the blocks, the inch bottom starters are placed inside the sections; the blade is heated over a small stove, and pressed down on the wood of the section. Then the fingers carry the









Comb Honey

starter to the knife, heating the wax edge. The blade is then quickly removed and the section slid quickly against the warm wood. Once learned the union of wood and wax is firm and substantial. The dovetailed corners in this operation should be placed so the dovetails will be at the lower edge of the finished job.

Now, on the right page, at the top, the bigger top foundation pieces, or top starters, are in turn, fastened into the sections in the same way. Then your finished sections will have large top and small bottom starters of foundation, and the sections are ready to remove to the supers.

The next to the top picture (right) shows how four sections at a time may be removed and placed in the section carriers; or set on the tins of an airway super, (Killion style). With scalloped separators in place against each row of sections, and springs at the side to take up the slack, your supers are about ready for the bees.

One thing more to do; paraffin the sections. Melt the paraffin and heat it to about 330-350 degrees. A lower temperature results in too thick a coat; a higher one darkens the wood. Paint the sections on top (both top and bottom with T-supers). Then, when scraping the sections for market, you have nice clean wood; not stained and propolized. Properly packaged and highly graded section comb honey is still a marketing certainty.

In the bottom picture (right) we come to the split section. The saw kerf that splits the sections goes through the center of the top and down through the center of the sides and ends just short of the bottom of the section. These four sections are in the section holder. The metal device is slipped into the top to spread the saw wide enough so a full sheet of super foundation can be slipped into the sections. Then the spreader is removed. The foundation fills the sections (no top and bottom starter). It is simple and many use this way. It takes more skill perhaps with the supers to prevent sagging of the full depth foundation although the fact that the full sheet runs through the four sections overcomes this to some extent.

At the top of this page is the kind of a big, working colony you need for comb honey. When it is reduced to one hive body and comb supers given to bees that handle foundation readily they will do well in producing section comb honey. Swarming is the problem. Killion dequeens the swarmers; then requeens with young, selected laying queens in ten days, after removing any queen cells that may then be present. This seems to work well.

Advice to Beginners

by Frank E. McLaughlin

Well, folks, you have heard the old saying "It's in the bag." At least part of my 1950 bee pasture is in the bag! Various kinds of clover seed for the farm.

I will try to answer in my column as many of your questions as I can.

Archie Leeder, of Janesville, Wisconsin, asks why scales of wax are found at the entrance and on the bottom board of his beehive. From my experiences, at the time Mr. Leeder found these wax particles on the bottom board there was a honeyflow on in his locality. The bees were probably secreting more wax than could be used for comb building. Wax is secreted by glands under the abdomen of a bee, and when a honeyflow is on or the bees are being fed, the secretion is very heavy. When bees are the busiest building comb, particles of wax that are dropped on the bottom board or at the entrance are not reclaimed for comb building.

Sometimes a beginner can mistake particles of pollen for wax. When pollen is being carried into the hive in plentiful amounts, often small pieces are dropped. These pieces of pollen are unlike wax in shape and color. Wax is more like flakes of a white or light yellowish color, and pollen is more like grains, with the color ranging from yellow to orange and greenish-gray.

The question of how to sterilize hive bodies also arises. First you should have a vat large enough to permit the equipment to be submerged in a strong solution of household lye and water. Bring this solution to a boil and allow to boil for 15 minutes. After removing from the solution, rinse the equipment thoroughly with clear water and let dry for several days. Then it can be nailed and repainted if needed. Extreme care should be taken to keep the solution from touching the flesh, especially the eyes and face. A heavy pair of pliers can be used to lift the equipment from the solution. Do not take any chances on using equipment which might have been in contact with American foulbrood without thoroughly sterilizing it.

J. T. Mixon, of Meridian, Miss., asks how a queen mates again after her wings have been clipped. Mr. Mixon, further on you state: "Of course she is mated before her wings are clipped." So you answer part of your own question. The queen mates only once in her lifetime. You also say that you have heard that the queen mates on the wing. This is very true. She does mate in flight or in the air. In clipping queens, always be sure the queens have been mated first.

Mrs. J. O. Evans, of Bridgman, Mich., wants to know why their honey granulated. She says they put it in 5-pound containers and kept it in cupboards. Mrs. Evans, I assume from your letter this was extracted honey. All pure honey will granulate in time at room temperature. However, some kinds of honey will granulate faster than others. Not knowing the nectar-bearing plants in reach of your bees, but judging from your location, it's possible your bees were working alfalfa. Honey from alfalfa is high in dextrose, which causes it to crystallize more rapidly than some other types of honey. Of course there are several other fall honeys that will also solidify very quickly.

Honey can be liquefied by heating, but extreme care should be taken. If the honey gets too hot the flavor will be impaired. Place the honey container in another container of water and heat the water. The honey should never be allowed to get over 160°F.

Clarence T. Huffman, of Fairfax, Va., asks: "How can I keep bees from building comb on the sides of the hive so that frames are difficult to remove?" As I see it, it is impossible to keep bees from drawing some spur comb and joining it to the hive and frames. But it can be eliminated to a great extent.

1. Scrape all the wax accumulation from the sides of the hive.

2. Be sure the frames are properly spaced by pushing the frames together towards the center, so that the outside frames provide the proper space on both sides.

3. Give the bees ample room. Add supers when needed. This will help to discourage them from drawing spur comb.

It is my opinion that considerable thought should be given to our bee pasture, and this is the time of year to do it. Too many of us take our sources of honey for granted, believing that there always will be plenty. Weed killers and the common garden hoe destroy a large quantity of our nectar-bearing plants.' I, for one, believe in planting seeds and shrubs, and setting out trees of different kinds that will bear nectar. If every beekeeper would take the time to plant even a couple of good trees and care for them and sow some clover seed, our pasturage for bees would keep building up instead of dwindling. Think about it.

Page Break Winner

Frank E. McLaughlin,
Editor of our "Beginner's Department"; beekeeper, tradesman; Kansas City, Missouri.

Congratulations, Frank! The little girl is daughter Phyllis Jean. Phyllis and her mother are both beekeepers and the family do all the work with two hundred colonies in odd hours. Frank is a master plumber, but his bees netted about half as much as the job two years ago. He distributes his own honey and raises queen bees at home. Some of the queen nucs are back of Phyllis. Frank is also ring leader in association affairs and one of the founders of the Western Missouri Association.

Death of J. M. Robinson

Prof. J. M. Robinson of the Alabama Polytechnic Institute died at his home in Auburn, August 27, 1949 at age of 60 years. He was head of the department of zoology and entomology and widely known for his work in the control of the boll weevil and other cotton insects.

Prof. Robinson became very well known in beekeeping circles in the 1930's when he served as director of the marketing agreement for the control of the shipment of package bees and queens. It will be remembered that this organization came into effect in order to prevent disastrous price cutting at a time when business was slack during the depression.

The beekeeping work at the college was under his direction and he was often in attendance at important meetings of beemen.

ABJ Available on Microfilm

We have recently made arrangements with the University Microfilms of Ann Arbor, Michigan to make available to libraries and others who are interested, issues of the American Bee Journal. This is to start with the January 1950 issue.

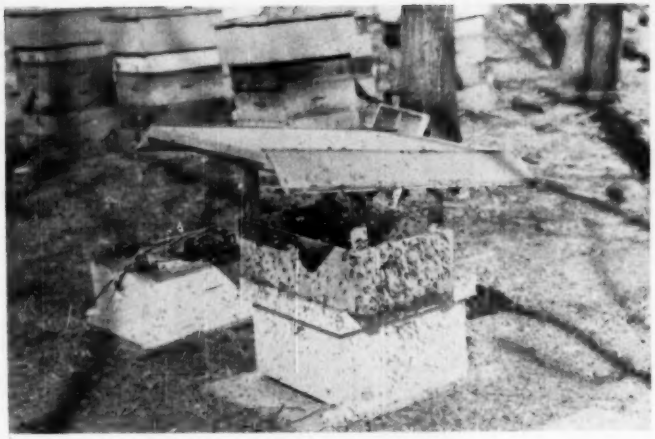
Microfilm of course makes it possible to produce and distribute copies of periodical literature on the basis of the entire volume in a single roll. We assume that for small publications such as our magazine, the cost will be quite considerable, but, of course, the saving in space will also be very great.

Any inquiries concerning the Microfilms should be addressed to University Microfilms, 313 N. First Street, Ann Arbor, Michigan.

Appeal to Association Officers

W. P. Carter, Secretary of the Queen Breeders' Research Council of New Zealand is appealing through this notice to all Beekeepers' Associations the world over for information which may be of help in improved breeding of queens. The Animal Research Division of their Department of Agriculture has recently obtained an artificial insemination outfit from the U. S. A. Those interested in exchange of information may address Mr. Carter at Wairere Road, Lower Hutt, New Zealand.

Mr. Carter is also an avid stamp collector, proof of which is evident in the samples sent to this office.



Feeding Substitute Outdoors

This pollen substitute or supplement shelter is easily made and the details of it seem to be clear in the picture. The shelter has been set up on top of a hive to make it easier to note the details. The slant top is made of glass screen (flexoglass or celloglass). It is light and inexpensive and keeps the contents of the shelter dry. Pollen used in dry mix should be oven-dried and not sticky. An objection to it is that the bees cannot visit it in cold or rainy weather.

A Century of Breeding

(Continued from page 167)

these cells develop under satisfactory conditions.

Queen rearers are divided in opinion as to whether there may be some sacrifice in the feeding of larvae raised under the Doolittle method as compared to the Alley method. Most commercial queens are produced by the Doolittle method, and where breeding stock is well chosen, honey producers are satisfied with the quality of the queens.

Proper care in the supply of drones for mating around the nuclei yard or sufficient isolation has not been fully exercised in the past. The drones must come from a breeding line that has been proved compatible with the virgins that are to become commercial queens. In other words a very high percentage of the eggs laid must be viable.

If the percentage of viability is high and conditions of temperature, food supply, and supply of nurse bees sufficient, the reasons for variations in quality of sister queens must be looked for among other factors. An undesirable factor, such as viciousness may be accompanied by good honey production. This is usually the result of a mixture of races or lines. Desirable factors in order of importance are high honey production record with reasonable temper, uniformity in performance of sister queens, disease resistance, honey-carrying capacity, longevity, suitable fall storage of honey and pollen for winter, and wintering. Tongue length has not been studied sufficiently for a concise opinion to be formed as to whether it is an important factor. Some breeding lines throw daughters that are quite variable and are not as satisfactory as lines that possess a uniform record of production.

The day has come when queen breeders should give every consideration to the possibilities of improvement in the bees furnished to others. The use of breeding stock and the best of care in rearing queens will reduce the percentage of duds that give trouble from unproductive colonies and supersedure. The twenty per cent or more of supersedure occurring in some cases can likely be reduced to less than ten per cent if the buyer does his part.

Promiscuous breeding between

Rockabye, Baby, Flat On the Floor

Alfred Bergstu, of Oslo, Norway, who is now studying with Dr. C. L. Farrar, at the Bee Culture Field Station, University of Wisconsin, sends this picture of his "boss," who, siesta fashion, rests after dinner. We commend this practice. It will add years to your life. Often, in the bee yard, after lunch, a sunny spot and a light cover, add zest to beekeeping. Personally I prefer lying on my back, hands crossed on the chest. Perhaps Mrs. Farrar thinks those slippers might harm her rug. Who knows?

races, lack of proper choice of breeders used within a race, failure to avoid inbreeding and isolation from undesirable stock have caused much disappointment among purchasers. Some failures are corrected by removal of an undesirable drone source but other stock may continue to decline if active measures are not taken.

Instrumental insemination of the queen is making it possible to carry on full control of breeding and selection and accomplish the transfer of desirable factors from one generation to another between lines of the same race or between individuals of different races. The results so far obtained leave no doubt as to possibilities along this line. Dr. Lloyd R. Watson, who after years of devoted work advanced the principle of artificial insemination by building much of the equipment himself, promoted the idea that there would be a "new bee." His equipment and methods have been improved to practical perfection today by men of the Bee Culture Laboratory: Nolan, Mackensen, Roberts, and Laidlaw (now of the University of California) to the point where little is to be desired.

Considerable impetus to the project of stock improvement resulted from a cooperative investigation of lines resistant to American foulbrood by the Bee Culture Staff of the Iowa State College, the American Bee Journal and the Texas Experiment Station. Dr. O. W. Park of Iowa State College proved that the resistant factor is inheritable.

The knowledge of genetics known today, which has resulted for example in hybrid corn, is beginning to be used in the production of better bees. It is a challenge to the entire industry. Producers of the new breeding lines and commercial queen breeders are beginning to make improved hybrids available to the public. Southern breeders have formed a new cooperative association not only to spread the gospel of better bees but to find the best stock and make proper use of it. It has been ispiring to be in close contact with one of the most recent movements for production of better bees, including the factor of disease resistance. The work arouses keen interest and entails some sacrifice—it appears to have been slow but there is satisfaction in knowing that the working tools and knowledge for more rapid progress are now in hand.

Prickly Pear

The prickly pears **(Opuntia)**, are among the most typical plants of the arid regions of America. About 150 species are recognized in Southwestern United States and southward. Spring in that region brings a wonderful display of cactus flowers worth going a long way to see.

The bees visit the flowers very eagerly and one observing the great activity might easily be deceived as to the amount of honey they are bringing to the hive. They do get pollen in abundance but the nectar supply is often disappointing and the honey stored offers slight return to the beekeeper. An occasional season brings a small surplus from prickly pear but it is only in rare years that a profitable crop comes in. It is valuable as a supplementary source but a poor dependence.

Final 1949 Crop Report

Final figures on the honey and beeswax crop for 1949 are now available from the U. S. Department of Agriculture at Washington. They show a total 1949 crop of 227 million pounds of honey and 4 million pounds of beeswax. This is an increase over 1948 figures of 10 per cent for honey and 3 per cent for wax, from 2 per cent fewer bees.

Per colony production was up to 40.6 pounds compared to 36 pounds in 1948. Most of the increase came from Texas, Iowa and other north central states. Ranking in order of total production, the first nine states were Minnesota, California, Texas, Wisconsin, Florida, New York, Ohio, Michigan and Idaho. During the year honey prices have dropped 15 per cent from avearge 1948 prices while the beeswax recession was about 13%. Eighty three million pounds of honey were estimated still on hand unsold in mid-December as against 70 million pounds a year earlier. The 1949 estimate, however, included the 1948 carry-over.

William L. Coggshall

Dr. William L. Coggshall has been appointed assistant professor of apiculture in the Department of Entomology at Cornell University.

A native of central New York, he is well known to New York State beekeepers and has the distinction of being a member of the third generation of his family to work with bees. His grandfather was one of the pioneers in commercial beekeeping, having started in 1865.

After helping to organize the Finger Lakes Honey Producers Cooperative at Groton, N. Y., in 1939, Dr. Coggshall served six years as its first president. In 1940, he began devoting full time to honey production, and in addition to New York State has engaged in migratory beekeeping in South Carolina and Florida. Following several years of commercial beekeeping he returned to Cornell, completing the requirements for the Ph. D. degree in 1940.

During his undergraduate days at Cornell he was a member of the freshman and varsity wrestling teams, and was assistant coach in the 1936 and 1938 seasons. After graduation in 1935 Coggshall served during the summer as a deputy apiary inspector with the Department of Agriculture and Markets, returning to Cornell for a brief period as assistant in apiculture.

In his new position, Dr. Coggshall's efforts will be in extension, teaching, and research relating to honey bees and other pollinating insects beneficial to fruit and legume seed production.

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2-lb. package with queen	$3.50
3-lb. package with queen	4.50
4-lb. package with queen	5.50
5-lb. package with queen	6.50
Queens (each)	1.10
Tested Queens (each)	2.00

Queens postpaid Package bees by express, F. O. B. shipping point Order from Chicago. Bees shipped from our southern shippers.

224-230 W. Huron Chicago 10, Illinois

Electric Uncapping Knife

This knife heats in 15 seconds and operates with a steady heat regulated by an adjustable thermostat in the handle. No control boxes. New design in plastic handle.

110-115 V. AC only.

Cotton Cord $13.50 while they last.

6-ft. rubber cord $15.00.

MACY ELECTRIC KNIFE COMPANY

1239 S. LORENA ST. LOS ANGELES 23, CALIFORNIA

SPECIAL PRICES FOR MAY—

We have 5,000 ITALIAN packages available for the month of May, at a price to suit anyone. We guarantee full weight, quality and satisfaction. Health certificate with each shipment. Young laying queen in each package. Prices as follows:

2-lb. package $2.50 3-lb. package $3.15 4-lb. package $3.80 5-lb. package $4.45

WILLOW GROVE APIARIES R. F. D. 1, Mansura, La.

MERRILL'S FIRST QUALITY

Italian D. R. or Regular Stock, Prompt Shipments.

Quantity	1-12	12-1,000
2-lb. packages with queen	$3.00	$2.50
3-lb. packages with queen	3.75	3.25
Untested queens	1.00	.75

Tested queens $1.50—Breeding queens $5.00 each.

MERRILL BEE COMPANY State Line, Miss.

SUNKIST ITALIANS

Guaranteed live delivery, health certificate, satisfaction.

Packages with Queen	1-20	20-50	50-up
2-lb.	$3.00	$2.90	$2.75
3-lb.	3.75	3.65	3.50
4-lb.	4.50	4.40	4.25
Queens	.90	.90	.85

SUNKIST BEE COMPANY Convent, La.

● QUEENS—PACKAGE BEES FOR 1950 ●

ESTABLISHED 1883

Maximum production is most easily assured with superior bees and queens. That's one way we try to help you make money. Superior bees and queens is our motto at all times. We like to have 50 per cent deposit and balance before shipping date. We believe this is fair to all—as we like to plan and ship the day you want shipment. Price scale:

Queens, any number $1.00—Tested Queens $2.00

2-lb. package and queen	$3.00 any number
3-lb. package and queen	4.00 any number

THE VICTOR APIARIES Uvalde, Texas

Classified Advertisements

BEES AND QUEENS

I HAVE A LARGE STOCK of nuclei and colonies for April, May and June delivery. Carniolans and Italians. Queens ready to mail now, $1.25 each. Wm. Atchley, 500 East 9th Street, Upland, California.

THREE-BAND ITALIAN queens, $1.00 each; with ten queens or more, one queen free. Shipment starts April 25. Luther Pickett, Efland, North Carolina.

ITALIAN PACKAGE BEES and QUEENS—Dependable quality, honest service, reasonably priced. Inquiries solicited. Crenshaw County Apiaries, Rutledge, Ala.

HYBRID QUEEN BEES 75c each postpaid. Ephardt Honey Farms, Batchelor, La.

SUPERIOR ITALIAN-CAUCASIAN hybrid queens, $1.00. Satisfaction or money back. Introduction your responsibility. Can fill more small orders April, May, June. James Seys, Rt. 1, Pharr, Texas.

YES, ALL COMPARISON proves that Green's profit producing queens are the best. They will please you from the brood nest to the harvesting of a great crop of honey. Backed by 22 years of breeding better queens. Price 90c each. After May 20th, 75c each. D. P. Green, Rt. 2, Deland, Florida. Phone 512XM.

QUEENS OUR SPECIALTY — Carniolans, $1.20; Caucasians, 90c. Isolated mating yards. Italians, 90c each; Italians after May 15th, 50c. Walter D. Leverette, Fort Pierce, Florida.

THREE BANDED ITALIAN bees and queens. 2 lbs. with queen, $3.50; 3 lbs. with queen, $4.50. Queens, $1.10 each. Bessemer Apiaries, 4300-A Raleigh Road, Greensboro, N. C.

JOE'S ITALIANS—3 pounds with queen, $3.75; 4 pounds with queen, $4.40. Queenless packages, deduct $1.00 per package. Health certificate and live delivery guaranteed. Joe Roy Apiaries, Route 1, Hessmer, La.

CAUCASIAN QUEENS—1 to 9, $1.25 each; 10 to 49, $1.00 each; 50 and over, 90c each. Howard E. Crom, Rt. 1, Box 75, Ripon, California.

BRIGHT GOLDEN ITALIAN bees and queens. 2 lbs. with queen, $3.50; 3 lbs. with queen, $4.50. Queens, $1.10 each. Guilford Apiaries, 4300A Burlington Rd., Greensboro, N. C.

CERTIFIED ITALIAN BEES—Three pound packages with young queens, $4.00 each to May 1; $3.75 to May 15th; $3.50 to June 1. Full weight, live arrival guaranteed. Todd Apiaries, Colquitt, Georgia.

FIFTEEN COLONIES BEES in two ten-frame bodies, metal tops, perfect condition, mostly Lewis, ample stores, never had foulbrood. Junk buyers don't apply. H. C. Achtenhagen, 5005 Woodland Ave., Western Springs, Illinois.

CAUCASIAN BEES and QUEENS—Finest quality, extra good workers and very gentle. Package bees—1 to 25, 2-lb. with queen, $3.50; 3-lb. with queen $4.50. 25 up, 2-lb. with queen, $3.25; 3-lb. with queen, $4.25 each. Select untested queens, 1 to 25, $1.10; 25 up $1.00 each. Health certificate with every order. Black River Apiaries, Rt. 1, Currie, N. C.

GOLDEN ITALIAN bees and queens—Best of quality, very gentle. Package bees, 1 to 25, 2-lb. with queen, $3.50; 3-lb. with queen, $4.50. 25 up, 2-lb. with queen, $3.25; 3-lb. with queen, $4.25 each. Select untested queens, 1 to 25, $1.10; 25 up, $1.00 each. Tested, $2.50. Carolina Bee Farm, Graham, N. C.

MARCH AND APRIL DELIVERY of Italian package bees and queens. Three pound package with queen, $4.50. Queens, $1.20 each. Write for quantity discounts. Brose Apiaries, P. O. Box 36, Felton, California.

CAUCASIAN CARNIOLAN BEES — 2-lb. package $3.00; 3-lb. pkg. $4.00. Queens $1.00. Tillery Brothers, Greenville, Ala.

THREE BANDED Italian bees and queens—Extra good workers and very gentle. Package bees, 1 to 25, 2-lb. with queen, $3.50; 3-lb. with queen $4.50; 25 up, 2-lb. with queen, $3.25; 3-lb. with queen, $4.25. Select untested queens, 1 to 25, $1.10; 25 up, $1.00. Satisfaction guaranteed. Alamance Bee Co., Graham, N. C.

THE SAME PRICE to everybody. 75c for Italian queens, 2-lb. package with young laying queens $3.00 and 3-lb. package with young laying queen $3.75. Southern Apiaries & Supplies Company, Chatom, Alabama.

CARNIOLAN QUEEN BEES $1.20 each. 2-pound bees with queen, $3.50 each; 3-pound bees with queen, $4.50 each. Ephardt Honey Farms, Batchelor, Louisiana.

GOLDEN QUEENS—90c air mail. Write for quantity price. O. E. Brown, Rt. 1, Asheboro, N. C.

BEST BARGAINS bees and queens. S. J. Head, Crossett, Arkansas.

LANGE'S QUALITY QUEENS for 1950—Leather colored Italians, 1-50, $1.10; 50 and up, $1.00. Lange Apiaries, Rt. 2, Box 23-W, Mission, Texas.

SATISFACTION ASSURED with Atherton's dark Italian queens at $1.00 each. Write for prices on established colonies. Atherton Apiaries, Kenedy, Texas.

REAL PETS—Brown's non-stinging, non-swarming bees. Honest producers. Season's price, $2.00 a queen. Brown's Apiary, Rt. 1, Kissimmee, Fla.

ITALIAN PACKAGE BEES & QUEENS. Booking orders for 1950. Prompt delivery. Martz Apiaries, Rt. 2, Box 826, Vacaville, California.

YANCEY HUSTLERS—Reliable package bees and queens. Priced right. Caney Valley Apiaries, Bay City, Texas.

PACKAGE BEES headed by Mountain Gray Caucasians or leather Italian Queens 2 lbs. with queen, 1-24, $3.60; 24-99, $3.45; 100 up, $3.25. 3 lbs. with queen, 1-24, $4.50; 24-99, $4.25; 100 up, $4.10. Queens, 1-24, $1.10; 24-99, $1.00; 100 up, 95c. March 20 delivery. Twin Bee Co-op., 3616 Caucasian Circle, Tampa 9, Florida.

BREWER LINE BRED Caucasian queens—1-24, $1.10; 24-99, $1.00; 100 up, 95c. Member ABBA. Brewer Brothers Apiaries, 3616 Caucasian Circle, Tampa, Florida.

FOR SALE

FIFTY 2-hive body colonies. 75 hive bodies with around a ton of honey. 50 shallow supers and racks. All for $10.00 a colony. O. O. Royse, 405 East Market, Warrensburg, Missouri.

FOR SALE—500 2-story 10-frame hives Italian bees. In good location. 1500 supers, extracting equipment, honey house 50 x 50. Modern new 5-room home. If interested write J. T. Camp, Hot Springs, Montana.

FIFTY COLONIES BEES in 2-story hives, $10.00. Also extracting equipment for 100 colonies. No disease. Alf. Hansen, 5002 North 23rd Street, Omaha 11, Nebr.

MEDIUM BROOD FOUNDATION 65 cents per lb.; 100 lbs., $60.00. H. G. Swede Callen, Kenyon, Minnesota.

FOR SALE—80 colonies Italian bees. Two stories, winter covers. Disease free. Fully equipped and locations. Homer Van Scoy, Candor, New York.

WINDOW CARTONS—Attractive, two colored, selling out at a sacrifice, 4¼x4¼x1⅞ inches, $9.00 per 1,000 f.o.b. Lose Brothers, 206 East Jefferson St., Louisville, Ky.

CHEAP—100 section supers, 10-frame beeway 4¼x1⅞ (with fixtures). 25 covers and bottoms 10-frame (wood). 1 Root four-frame hand extractor, reversible. W. R. Suhre, Route 1 No. 1, Hoopeston, Illinois.

110 Colonies, home, best Illinois locations. Box 52, San Jose, Illinois.

FOR SALE—Willcox uncapping machine complete with 3-compartment separating tank used very little. Will take package bees for part payment from Texas or California. A. B. Chenovick, 825 Helena Avenue, Helena, Montana.

40 Colonies Italians. Disease free. Extra equipment, accessories at bargain. Walter Drennen, De Pue, Illinois.

BEES and full line of equipment. Also '49 honey crop. Write for details. Earl Dohse, Gordon, Nebraska.

FOR SALE OR LEASE—350 hives of bees in two bodies. 800 chunk honey supers. 300 bodies with frames. 200 bottom boards. 20-frame Root extractor. Lots of other equipment. All ten-frame size. Terms to reliable party. Will take honey for payment. Homer Godwin, Emison, Indiana.

FOR SALE—100 factory made Dadant hives, bottoms, metal tops, good combs. Inspected, no disease. WANTED—100 ten-frame all wire excluders. Harry W. Johnson, Sibley, Iowa.

FIFTY HIVES of bees, 10-frame, Root, 1½ story, strong. Johnson Brothers, Toulon, Illinois.

50 to 100 colonies, 10-frame double hive bodies, $12.50. Supers with combs, $2.50. Other equipment. No disease. G. J. Eller, Hazelhurst, Illinois.

400 colonies, supers, extracting equipment. Can retain locations. Box 293, Port Huron, Michigan.

FOR SALE—Honey house at Elk Rapids, Michigan (near Traverse City). Also orchard and summer locations. Ralph Blackman, Portland, Michigan.

EIGHTY COLONIES of bees, 10-frame hives, mostly Roots. Equipment for 150. Good condition, no disease. Extractor and honey tank. Emil Cimfl, Cumberland, Wisconsin.

SEVERAL HUNDRED full depth 10-frame dovetailed supers @ $2.00 in lots of 100 or more. Queen excluders, metal bound, @ 30c. 9-frame extractor, $100. Two 5-ton honey tanks, $40.00 each. C. M. Howard, Independence, California.

FOR SALE—11 swarms bees, 2 bodies, painted, 10-frame, tin covers. Hives with combs, shallow and comb supers. Harold Clark, Rt. 3, Box 35, Columbus, Wisconsin.

STRONG, established, over wintered colonies with equipment and stores. Paul La Plant, Anoka, Minnesota.

FOR SALE—20,000 good used Hoffman and unspaced frames. Priced low. Roy Littlefield, Exira, Iowa.

BEES—208 colonies, 640 supers. Eagle County, Colorado. A. Schnaithman, 619 Whedbee, Ft. Collins, Colorado.

CLEAN USED 10-frame factory-made dovetailed shallow supers with 5⅜ in. frames and thin super foundation, 90c each. Also seven wire and wood queen excluders, 60c each. Fred Peterson, Alden, Iowa.

FOR SALE—Two hundred good used eight-frame hive bodies. Two hundred eight-frame shallow extracting supers. One hundred fifty eight-frame all wire queen excluders. Disease free. Kalona Honey Co., Kalona, Iowa.

FOUR ROSEDALE uncapping planes 5 in. steam $7.00; electric $11.00, extra blades. 100 cans light clover honey 12c f.o.b. Wm. H. Elges, Griswold, Iowa.

FOR LEASE OR SALE to experienced man —500 to 800 colonies. Choice location. First-class 10-frame equipment. Permanent position to right man. Apply at once. Starting season March 1. Box 30, c/o American Bee Journal.

FOR SALE (Continued)

FOR SALE—Shallow frames, slotted top bar. Just the thing for cut comb or chunk comb honey. Geo. J. Lengst, Tuscola, Michigan.

IN FLORIDA 600 1½-story colonies, $10.00 each. Cypress hives, combs in good condition, all young queens. With six frames of brood or more, and ready for production. No disease or junk. Extra equipment below cost. Box 160. care American Bee Journal.

HONEY and BEESWAX WANTED

WANTED TO BUY—Clover honey. Give quantity and sample. Am asking for inquiries for future crop. Ben Hughes Honey Co., New Market, Mo.

WANTED—Amber or white honey in trade for package bees. Send price, samples and description. Sunkist Bee Company, Convent, Louisiana.

WANTED—Bulk quantities of amber and white extracted honey. Submit sample. Schultz Honey Farms, Ripon, Wisconsin.

WANTED—5,000 to 12,000 lbs. of white clover honey in 5 gal. cans, at once. Will pay 10½c delivered. Roscoe F. Wixson, Dundee, N. Y.

WANTED—Honey in any quantity. Please send samples, quote price. Cole's Honey Co., 231 Pacific Ave., Piedmont, California.

WANTED—Comb honey and extracted honey, large or small amounts. Send price list and samples. R. A. Raley, Box 2283, Daytona Beach, Florida.

WANTED — Extracted honey, white or light amber, in 60's. State price in first letter. Ed. Heldt, 1004 W. Washington St., Bloomington, Illinois.

WANTED—All grades comb and extracted honey, large or small amounts. Quote price in first letter. Mail sample. King Honey Co., 326 Bales St., Kansas City, Mo.

HONEY AND WAX WANTED. Mail sample. Advise quantity. Bryant & Sawyer, 2425 Hunter St., Los Angeles, Calif.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1360 Produce Street, Los Angeles, California.

HONEY FOR SALE

FOR SALE—Forty sixties, light to white extracted honey. Slightly rusted, used 60's. Best offer. Walter Drennen, De Pue, Illinois.

500—60's clover and yellow blossom honey, about 50-50 blend. Clyde Roberts, Mooresville, Mo.

SEVERAL TONS top grade buckwheat honey for 7 cents at my place. A can or ton, promptly shipped. Andrew Mahay, Johnstown, New York.

CLOVER, extracted, in 60-lb. cans. Liquid, $8.40 per can; crystallized, $8.00 per can. Lose Brothers, 206 E. Jefferson St., Louisville, Ky.

NEW CROP OF HONEY shipped daily from producer in Florida. Pure orange blossom, 5-lb. pail $2.25. Pure Florida cut comb honey, 5-lb. pail $2.75. No. C.O.D. orders; all shipments prepaid. E. R. Raley, Box 1610, Daytona Beach, Florida.

WANTED

ABOUT TWELVE COLONIES with equipment, near Milwaukee. L. Tessmer, 1028 South 23rd Street, Milwaukee, Wisc.

POSITIONS AND HELP WANTED

WANTED—Helper with some experience. State qualifications and wages expected in first letter. C. C. Elmquist, 405 Fourth Street South, Moorhead, Minnesota.

WANTED—Semi-trailer truck driver to go with bees North. Must be careful driver and furnish references. Ephardt Honey Farms, Batchelor, Louisiana.

WANTED—Experienced man to manage apiary. Give references. Write Box 9, care American Bee Journal.

SUPPLIES

DADANT'S FOUNDATION — 100 lbs. 3⅞x16½ thin surplus for 4¼ sections, $81.60; 100 lbs. 5x16¾ plain medium brood, $73.60; 50 lbs. 4 13/16 x 16¾ crimp-wired, $38.30. LEWIS BEEWARE—200 10-frame inner covers, carton of 10, $5.20; 30 10-frame metal covers and inner covers, carton of 5, $10.12; one 60 lb. fiber cases, $11.64 per 100; 6-10 fiber cases, 20, $3.80; 12-5 cases, 25, $4.50, f.o.b. Smith's Bee Supply, Box 603, Billings, Montana.

YOUR WAX WORKED into quality medium brood foundation 23c pound; 100 lbs., $19.00. Medium brood foundation for sale at 65c lb. Fred Peterson, Alden, Iowa.

OUR FREE BEE SUPPLY CATALOGUE. Lists double boilers, special motors, blowers, etc., not listed by others. We manufacture bee hives, wired and plain foundation, tanks and extractors, etc. Quick delivery from stock. Walter Kelley Co., Paducah, Kentucky.

CLEAN UP AFB with sulfa 25 tablets 50c; 50, $1.00; 100, $1.50; 1,000, $7.00. Free Circular, quick shipment. WALTER T. KELLEY CO., PADUCAH, KENTUCKY.

SOUTHERN CALIFORNIA HEADQUARTERS for Bee Supplies. Make our facilities your "Trading Post." Complete stocks. See our Bulletin Board for Budget Bargains. The Diamond Match Company, 1300 Produce Street, Los Angeles 21, Calif.

FOR SALE—25,000 mill run Lewis sections 3⅜x5x1⅜ scalloped 4 sides ½ inch at $14.00 per thousand, f.o.b. Hamilton, Ill. Dadant & Sons, Hamilton, Illinois.

THE ONLY COMB FOUNDATION PLANT in the East. We sell foundation, work your wax, render combs and cappings. Robinson's Wax Works, Rt. No. 3, Auburn, New York.

WRITE FOR CATALOGUE. Quality bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries. Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

BEE SUPPLIES — Lewis Woodenware — Dadant's Foundation. Send for catalog Simeon Beller, Intercourse, Pennsylvania

DAIRY GOATS

CASH FROM SPARE TIME—Operate goat dairy. Magazine tells how; trial 6-mos. 25c. Dairy Goat Journal, Columbia, B2, Mo.

SEEDS AND TREES

TIME TO PLANT BETTER AND LARGER BASSWOOD TREES for quick bloom and shade. Pyramidal Silver Basswood (Tilia tomentosa) stands more heat and drought. 4-5 ft., $2.75; 5-6 ft., each $3.75. Cordata. Small leaf European Basswood, red twigged. 4-5 ft., $2.75; 5-6 ft., $3.50; 6-8 ft., $4.00 each. American Basswood, 4-5 ft., $1.50; 5-6 ft., $2.50; 6-8 ft., $3.00; and 8-9 ft., $4.00. F. O. B. St. Peter, Minnesota. Order from this ad. Hopa Ornamental Crab, 3-4 ft., $1.20 postpaid. Free Bee Pasture catalog. Nicollet County Nursery, St. Peter, Minnesota.

THREE SPECIAL packet seed collections SEEDS OF HONEY PLANTS. FORAGE CROPS—One packet each ten varieties; BEE GARDEN—Six packets seed unusual varieties; FOR NATURALIZING— Eight packets. Each collection $1.00; all three (24 packets seed of 24 good honey plants) for $2.75; postpaid. Free catalogue. Melvin Pellett, Atlantic, Iowa.

MISCELLANEOUS

TRITOX-AMERICA'S No. 1 MOLE EXTERMINATOR. PDB for wax moth control. Ladino clover seed. Bluevine seed. Mimosa trees. Tritox Chemical Company, Washington, Indiana.

KNOW interesting facts concerning the bees of India through the INDIAN BEE JOURNAL, published in English, by the Phupen Apiaries (Himalayas), Ramgarh, Dist. Nainital, U. P., India and obtainable from them. Subs. Rs 7/-or 10 Shillings or 2.25 Dollars per annum. Single copy Rs ¼/-s. 1/9 or 49 cents (international money order). Payment in mint postage stamps of your country accepted.

Departments

American Honey Institute

Business is like people—with the proper care and attention it grows and prospers. Without adequate care it is likely to develop poorly and cause trouble.

But, unlike human beings, middle or old age does not permit a business to retire and draw a pension. For as one business executive emphasized: "You must keep your business young!"

People are treated with deference and respect when they reach a certain age and have lived decently. A business is patronized and brings in bigger profits only when it can effectively meet and beat the competition of new firms, and can match these "young'uns" in their marketing and production.

If you've been in the bee business for many years, this is not the time to "let it ride along." The easy selling and the big demand of the war years are over. New beekeepers begin business every year, and they are eager to try more efficient production methods and new ways for advertising and distributing their honey. Are you going to sit back and let them usurp your business without actively competing with them? You aren't? Then it's time for you to check these items about your business.

Is your equipment clean, painted, in good shape, and ready for smooth and efficient operation?

Have you considered where you will market your honey?

Will it be directly to the consumer? To the packer? To a cooperative, a store in your locality, bakers, confectioners, ice cream manufacturers, restaurants, meat markets, prescription pharmacies, or half a dozen other places?

It is important to begin thinking about this even before you invest in containers, labels, stickers, or develop an advertising program. You must decide whom you want to appeal to, and then the means of doing it will follow.

For a detailed discussion of marketing and selling, Honey Institute members should send for the thorough, yet concise booklet called, "Let's Sell Honey." It's free to members and will provide you with invaluable aids toward getting valuable profits.

Those of you who have not yet joined the Institute, and are interested in having honey promoted, gaining access to very helpful plans for your business, and acquiring direct advertising aids, should inquire about membership by writing to the American Honey Institute, Madison 3, Wisconsin.

* * * *

Do you want to see honey hit the No. 1 spot on the housewife's list or do you wish to detract from furthering the cause of honey? You and your fellow beekeepers will save time, energy, money, and gain your objective if you promote honey and your brand of honey.

Idaho features potatoes; Washington, apples; and Florida and California vie with each other for orange supremacy. But honey is produced wherever bees hum and flowers bloom.

Differences in honey are based on the various flowers from which bees get their nectar, the health of the bees, and the care given the product when packaging. These variations hold true in every one of the 48 states and in Canada. It isn't the **where?** but the **how?** that's important to honey consumers.

When a housewife goes through the supermart with her cart, she is attracted or fails to notice honey on the shelves because of the container, the label, the color, the clarity, and the way the honey is displayed.

That is all that matters to her. And if she does buy a jar, only one other question remains in her mind —Does the honey have a flavor worth using again, or should the product be tossed aside rather than letting it occupy shelf space?

If the honey is good, then she will notice the **brand** of the honey, so that she'll be sure to buy the same thing again when she needs more of the "liquid gold."

What does this psychology mean to you? It means that you must, first of all, produce good honey. And that secondly, you must choose a suitable container, have a striking, colorful, individualistic label, and that the brand of your honey must be featured proudly and prominently.

The **State** in which the honey is produced doesn't rate. Only the state of the honey, itself, and producing the right state of mind in the customer count.

When considering a label for your honey, it is not essential, or often even desirable, to picture the honey bee. A bee arouses two reactions on the part of the consumer. Either she associates it with honey—which is fine, OR, she thinks of getting stung, with the resulting pain and misery.

If the lady of the house or any of her children have been stung, they want no part of anything that will remind them of the incident.

So why not play safe? Picture the golden goodness of the honey, itself. Or place it on top of pancakes, cereal, rolls, or waffles. Then the association cannot help but be a pleasant one, and the honey will be "snapped up."

And put this label on containers that the housewife can easily place on her kitchen shelf. Sixty-pound, 50-pound or even 25-pound containers are much too large for the average woman to handle. The housewife may realize that it would be more economical if she could buy her honey in those quantities, but space won't permit it. She, therefore, isn't interested in more than a 5-pound jar, and often, a 1-pound jar is just about right.

Take a tip from other packagers. Put your honey in a container that is easily taken from the shelf, put into a supermart basket, and then carried home.

Don't put it into something that will require special delivery and make it almost impossible for the average woman to lift or carry.

Try some of these suggestions—keep your beekeeping modern and your business young.

All Around the Bee Yard

G. H. Cale

March 21, yesterday — spring! Beautiful spring! Snow, rain, chill wind, slop, clouds, day after day. And look at the coal pile. It should have stopped shrinking some time ago but it may take some of the new high-priced coal to get by. We have much to thank John L. Lewis for, haven't we? How he has blessed the oilmen and the distributors of gas furnaces. They can dig out some sparkling copy.

Seems like the bees have more to contend with in early spring than in all of winter. Chiefly, as far as the beekeeper is concerned, they may need feed; just a few colonies here and there, unless the beekeeper is one of those careful fellows who made sure that every colony had an abundance last fall. That last is an amusing phrase. Some colonies with the most apparent abundance come up short the earliest; some with apparently only enough stored honey and pollen in fall to last until the edge of spring, often run into mid or late May before they need any help.

In other words the beekeeper often has to be an oracle and in this he usually fails. If some colonies in early spring do not need the honey or sirup which has been kept in reserve to give them, they may need some pollen supplement right above the spring cluster, even with pollen stored in side combs. In this often pitiful spring weather (say February 1 to April 15) bees may not be able to reach the stored pollen when they need it most for brood. That is where the supplement comes in to keep the brood on the increase early.

If you think February is too early for "spring" read Rahmlow's article on page 168. For two years he has repeated this story. He starts "spring" work early!

There is confusion, however, about pollen supplement. We have trapped pollen in summer, dried it and stored it. Early in the spring we have mixed it with soy flour and both sirup and honey but so far either the bees do not use it, or if they do, the brood does not show normal development; eggs do not hatch, or if they do, the larvae do not develop. However, if a comb of pollen is also given within reach of the bees, development proceeds normally.

Henry Schaffer, in Wisconsin, saves the pollen from old combs, dries it, grinds it, and mixes it with sirup. In spring he augments this with soy flour and feeds cakes of it to each colony early; this year beginning on March 7. We have tried some of this preparation and find that when it is used the brood develops normally. So, what is there in stored pollen so necessary to normal brood development?

Walstrom, in Nebraska, (see March ABJ, page 118), finds that dried brewers' yeast mixed with distillers' solubles, in comparison experiments, showed the greatest crop gain.

Edwin Curtis, Romney, West Virginia, read in March ABJ the comment by Art Kehl on effective honey distribution; how a few do well at it; but most do poorly. Says Curtis: "Maybe, but wholesale houses here are selling honey for 27½c a pound; when the store adds its profit, it makes the first man look as though he had been taken for a ride. Why so much difference. Maybe if the producers got more, more of them could have nice homes."

How do you reply to the oft-repeated complaint about the spread between what the producer gets and what the consumer pays? In volume distribution of honey, the usual movement to the consumer seems destined to follow the pattern by which foods of any kind go from the farm to the consumer. The crop of honey, if it is not sold by the producer, or the producer-packer, first goes to the co-op or the large packer. There it is packed for the trade and moves to the broker; the broker moves it to the wholesale distributor who finally gets it into the store. Is it any wonder that 8c honey brings over 30c in the store? If the consumer will pay it.

Now, tell me, Mr. Curtis, how do you beat that rap? Small crops in local sale do not get in this jam; but large crops from commercial honey producers do. Under price support, legalized by the government at 12c or more, maybe the consumer will be asked nearer 40c a pound. Will the consumer pay it? And, if he will not, what do we do then? Huh?

On the other hand what producer wants to keep on producing if he has to sell at or below production cost? Call for Hercules; come on boy, do your stuff; here is another Augean stable to clean!

Maybe we had better forget about honey production and get rich from pollination service. Some of the larger beekeepers who are located near special seed crop projects (vetch in the South; alfalfa in the Midwest; localized ladino plots; and bird's foot trefoil) find the growers willing to pay for the pollination service, especially on a share-the-crop basis. But the beekeeper in the general farming community, where red clover, or alsike, or mixed clovers are the rule, finds that the most he can get from the farmer is a free location. Maybe this situation will change in time and the general farmer will consider the bees of enough value to offer some kind of compensation to the beekeeper. Now some of them are willing to plant legumes of value for honey production, like sweet clover, and so keep the beekeeper on the farm. If we can demonstrate that concentrated bee population will give superior and highly paying seed yields, then maybe most farmers will fall in line.

The demand for honey could not be filled if 2½% of the gross income from beekeeping were wisely expended each year for advertising.
Glenn O. Jones.
Sec'y-Treas., American Beekeeping Federation.

The Federation

No announcement from Washington on the price support program for honey has been received as this is written (March 16, 1950). We are informed that the Production and Marketing Administration has had the proposal ready for the Commodity Credit Corporation Board for several weeks, but the docket is only one of many which is being delayed by the great press of business awaiting decision by that group. The request of C. C. C. for additional lending power now before Congress may be a reason for further delay on such decisions. Such matters are of greater importance than the honey proposal and, although it has been pointed out to officials and to Congress that each day of delay is a hardship to the beekeeping industry, it appears that there is little that can be done to expedite matters.

In as much as the proposal is ready for presentation to the C. C. C. Board, it is possible that a decision could be made at an early date. At least, we all hope it will.

The Executive Committee of the Federation met at Atlantic, Iowa, February 18 and 19, to review the program of the Federation and to establish an acceptable and constructive program for 1950. Those present were: Roy A. Grout, president; N. C. Jensen, vice-president; John W. Holzberlein, Jr., C. G. Langley, W. W. Wicht, Newman I. Lyle, and W. A. Stephen, members of the Executive Committee; Woodrow Miller, past president and ex-officio member of the Executive Committee; Glenn O. Jones, secretary-treasurer. Henry A. Schaefer and Charles Hofmann. The following immediate objectives were established for 1950.

1. That the American Beekeeping Federation has as its major objective for 1950 the development of methods and means whereby the pollination services of honey bees pay a greater part of the cost of beekeeping.

2. To request the U. S. D. A. to make available to the honey industry sufficient funds to move through both the industry diversion and export subsidy programs approximately 20 million pounds of honey.

3. To request state and federal agencies to place new emphasis on research and on the dissemination of information relative to problems of the package bee industry of the United States.

4. To work in full and complete cooperation with the Production and Marketing Administration, U. S. D. A., to assist in the establishment and functioning of a support program for honey that will be of benefit to both the Government and to the entire bee and honey industry.

There was a thorough discussion of Resolution No. 10 which directed the Federation to appoint a committee for the purpose of setting up standards of sanitation for the handling of honey. In view of the recent interest in this problem on the part of several states, as well as the possibility that the Government support program may give serious consideration to the cleanliness of honey, the selection of this committee and its suggested program was given a great deal of thought. The committee will be known as the "Honey Handling Standards Committee" and the following were appointed: Henry Schaefer, chairman, Charles Hofmann, Raymond Fischer, E. J. Anderson, J. K. McClaugherty, Don P. Barrett, and E. J. Stanton.

It was agreed that, in view of the urgent need for improved marketing of honey, the Federation should continue to give attention to problems of marketing which are beyond the scope of the activities of the American Honey Institute. It was thought that the Marketing Committee should be continued with the following primary objectives:

1. The building of markets for specific honeys in the areas where they are produced.

2. The investigation of the possibilities of additional marketing research, an improved marketing news service, and a more frequent reporting of honey prices by the Department of Agriculture.

3. The encouragement of more extensive advertising of private brands.

This is not the entire program as suggested by the Executive Committee to the Marketing Committee. It further is hoped that it will be possible for the following members of that committee to meet for a three-day conference on marketing problems sometime during the year: Howard Foster, chairman; Walter Diehnelt, Sr., Roy S. Weaver, Jr., Mrs. Carl Soder, D. C. Babcock, E. H. Adee, Ray Rocke, Glenn Gibson, and Art Kehl.

At the direction of the Executive Committee, the Honey and Pollen Plants Committee and the Agricultural Relations Committee are being consolidated under the name of the Honey and Pollen Plants Committee, with Dr. S. W. Edgecombe and Clarence L. Benson as co-chairmen. It was suggested that Dr. Edgecombe continue his valuable work along pollination lines, with Mr. Benson giving special attention to agricultural insecticides and their effect upon honey bees. The personnel of the committee still is being considered.

The Research and Education Committee and the Stock Improvement Committee also are in process of being reorganized along slightly different lines. The latter committee will take the place of the former Bee Breeders' Committee and will be composed of an over-all industry group interested in the problem of improving honey-bee stocks. In addition, five special committees were suggested and approved as follows: Legal Committee, Emblem Committee, Convention Committee, Committee on Definition and Standards for Honey and a Past Presidents' Committee.

Those gathered at Atlantic were impressed with the fact that the work and the problems of the industry are great and many. The two days were full of serious discussion and deliberation. The outcome was the establishment of a program for the year that is extensive and more comprehensive than ever before. Through the work of the Executive Committee and the various committees of the Federation, it is believed that good progress will be made during the year towards improved organization and betterment of the industry. As you know, that is the purpose of the Federation.

Previews and Events

Lackawanna County Beekeepers Assn. Annual Spring Round-up, April 11

The Annual Spring Round-up will be held at the Waverly Community House, Waverly, Pennsylvania on April 11 at 8:00 P. M. Featured this year will be W. W. Clarks, Extension Apiarist from Pennsylvania State College; Prof. Edwin J. Anderson, head of the Entomology Dept. at State College who will speak on recent research; and Jesse Landenburger, County Agricultural Agent, who will discuss the 4-H Bee Club organized last year.

Mrs. R. T. Smith, Chairman.

Westchester County, N. Y., New Rochelle, April 16

The Westchester County Beekeepers' Association will hold its regular monthly meeting at 2:30 P. M. on Sunday, April 16, 1950, at the Odd Fellows Hall, 20 Lockwood Avenue, New Rochelle, N. Y.

Following the meeting, instructive movies will be shown after which refreshments will be served. Visitors are welcome.

B. F. Miller, Publicity.

Western Missouri Beekeepers Assn. Kansas City, April 16

Due to the fact that Easter falls on our regular meeting date, it will be postponed until the following Sunday, April 16. The meeting will be held at 812 Westport Road at 2:30 P. M. Our speaker will be Mr. Carl Kalthoff of Lexington, Mo., who will speak on building up colonies for an early honeyflow, supering, and swarm control.

Mrs. H. J. Schaffer, Sec'y-Treas.

Cuyahoga County Beekeepers' Assn., Cleveland, April 16

There will be a meeting of the Cuyahoga County beekeepers on Sunday, April 16 at 2 P. M. at the Miles Ave. Church of Christ Hall, 9200 Miles Ave., Cleveland, Ohio.

We will have a round-table discussion on spring management of bees at which the guest speaker will preside. There will be an outdoor demonstration at Dr. King's place which adjoins the church. A three-pound package of bees with queen will be hived in a new hive and later will be raffled off at the meeting. Visitors are welcome.

At the February meeting of the Association the following were elected officers for 1950: President, Dr. E. E. King; Vice-president, V. T. Hanus (both of Cleveland); Secretary, John J. Rafter, Shaker Heights, Treasurer, Henry J. Bittel, Cleveland.

Dr. E. E. King, Pres.
John J. Rafter, Sec'y.

C. L. Duax

C. L. Duax, formerly Illinois Inspector, and prominent in Illinois and Wisconsin beekeeping, recently died at Tampa, Florida, according to information received from his family. He was a comparatively young man, and his loss here will be felt keenly.

Tazewell County Beekeepers Assn., Peoria, May 14

Tazewell County Beekeepers' Association will hold a grand outdoor meeting on Sunday, May 14th, at the home of the secretary Joseph Jachman, 500 Swords Ave., Peoria, right behind the Guardian Angel Home. A full and interesting program, which includes movies, has been prepared. Radio Station WMBD, with Farmer Bill will either broadcast the proceedings direct or make a recording, to be broadcast at a later date. A demonstration of the installation of package bees will be given. There will be an election of officers and dues will be accepted.

Joseph Jackman, Sec'y.

H. G. Payne

H. G. Payne, Provincial Apiarist for Nova Scotia, recently died, according to information received from Endel A. Karmo, of the Apiculture Division of the Department of Agriculture and Marketing at Truro. We have no information as to his successor.

Lloyd Noble Passes Away

Our readers will recall two articles in our magazine recently by Lyman E. Coe of the Samuel Roberts Noble Foundation at Ardmore, Oklahoma, having to do with soil conservation and the efforts being made by that Foundation in Oklahoma.

The Foundation was underwritten by Mr. Lloyd Noble who recently died very suddenly while on a short visit to Houston, Texas. It is regrettable as he was still in his prime at the age of 53.

We understand that the Foundation will continue to function without interruption, inasmuch as Mr. Noble had provided for a fund of some $30,000,000 to 40,000,000 for its continuation.

Crop and Market

M. G. Dadant

Honey is pretty well sold in the New England states, New York and Pennsylvania, and south throughout the entire Atlantic Coast. The crop is pretty well cleaned up throughout the southern areas as far as Texas where some lots are still in the hands of packers and cooperatives, and a few in the hands of producers, although many lots of northern honey have gone south to help piece out until the new crop comes. The tendency down there is to go in heavily for chunk honey and perhaps get the necessary additional extracted from northern areas to make the complete pack.

We have reports of numerous producers who have been unwilling to sell their honey at the price they could get and are holding it in anticipation of the possibility of profiting by the anticipated support price to be issued by the government.

As we go westward, the number of producers holding honey is considerably increased, particularly the larger ones, and this applies as well to most of the packers, either independent or cooperative. With the independent packer there is no doubt that considerable honey has been bought at as cheap a price as possible, and stocks are ample for the balance of the season with the anticipation that there may be a rise caused by the government stepping into the picture. The intermountain territory probably is as bad off for lack of movement of honey as any section of the country, whereas California apparently is building her markets and consuming more and more of her own honey.

Will All Honey Move?

Without a doubt, honey in the hands of smaller beekeepers, and practically all in any case, will move in all eastern and southern sections. There is a very great question as to whether the honey held in stronger hands will move ahead of the new crop. In fact we are inclined to be pessimistic on this score, and a little disappointed that some lots are being held whereas some markets are "going begging" for honey. It may be all right to want a better price, but certainly it's not good judgment to refuse to help keep markets supplied.

Condition of Bees

In practically all sections of the country, bees are coming through the winter in excellent shape, there having been no extremely prolonged cold and sufficient warm weather for the bees to get flights. This applies to all sections, except perhaps the western Canadian provinces and some sections of Montana, Minnesota, northern Wisconsin and Michigan.

With the moderate winter in some sections, there is no doubt but that the bees used stores freely and it may be necessary to inspect colonies as soon as spring opens up to replenish those which have become depleted in stores.

In some sections of the central South, we hear reports of considerable winter losses. However, these are rare, and on the whole, we believe the condition of bees is equal if not above the average for April 1.

Honey Plants

Naturally, it is a little early to get any good reports on honey plants, particularly throughout the northern areas. In the Southeast, honey plants were coming along excellently but have been hurt by March freezes, although there may be a satisfactory recovery.

In the northern areas, the New England states and New York were hard hit by dry weather in the fall and early winter, which may have some effect upon the number of honey plants going into winter. Later rains and snows have been good and in fact snow and moisture have been satisfactory throughout all sections of the country, so that in most places plants should be in desirable condition. In western Kansas, Nebraska, parts of Wyoming, west Texas, Colorado, and Montana, there has been too much dry weather and as yet the snows in the mountains have not been sufficient to provide enough water for irrigation purposes in the late spring and summer.

The dry weather of New York extended up into Quebec and parts of Ontario, and there is some question as to whether the white Dutch clover and other legumes may not have suffered as a consequence. Also frequent freezing and thawing during the late winter has caused some heaving of clover, although apparently not enough to endanger the crop.

Have Legumes Increased?

It is pretty generally recognized that legumes have increased in most sections of the country. The conservation authorities have instilled into farmers the necessity of proper rotation and of rebuilding the soil, which was robbed too freely during the war years when war crops were necessary. In addition, permanent pastures are being established and these require legumes which in most instances will be of benefit to the bees and the beekeeper. The Ladino clover and bird's-foot trefoil, particularly in the eastern sections, have been coming to the fore rapidly. In southern areas, crimson clover and hairy vetch are being planted in increasing acreage and in Texas thousands of acres are going over to vetch as well as to annual Hubam clover.

While the conservation measures have been slower to "catch on" in the less depleted soils of the Central West, the reduction in acreages of cotton in the South and of corn and other crops in the Central West are tending to force the farmer into legume production. This has meant that you can anticipate more legumes this year than previously and undoubtedly much more in acreage in the future.

Mr. and Mrs. Pellett (Photo by O. W. Park)

The Postscript

Frank C. Pellett

Interest in a slogan for honey still continues but no one as yet has found anything equal to the florists' "Say it with Flowers." H. R. Eaves, of Newton, Kansas, writes to say that Woodman with his car sign, "For Goodness Sake Eat Honey" comes nearest to it. Eaves says that the public is little interested in the health aspect of honey but the best he can suggest is "Honey—Best Sweet You Can Eat."

Jess J. Little, of Sedro-Woolley, Washington, says "Finish It with Honey." Joe E. Huser, of Taylor, Texas, prefers "Sweeten It with Honey." For variety from James C. Mann, of Dallas, Texas, comes "Everyone Likes Honey."

Many times there have been efforts to capitalize the health value of honey as, "Eat Honey for Health" by Joseph Baumruk, Jr., Hinsdale, Illinois, and "Health With Honey," by Esther Claussen, Mount Morris, Illinois. From Wyoming, I. L. Revell, of Laramie, sees several possibilities including "Bee Honey Wise" and "A Sweeter Life With Honey." All of which goes to prove that really good slogans are hard to find. Just try to see whether you remember any of these tomorrow. When the right one comes along it will stick in your mind like a burr in a mare's mane.

From H. R. Busch in far New Zealand comes a most unusual calendar. Each month is given a separate sheet with a picture in natural color of one of the strange birds native to that country. New Zealand is one country that I have long wished to visit but because of the great distance will probably never see. There are so many things of interest there that one from this country would find himself in quite a different world. One must judge, however, from reading their bee magazines that their beekeeping is much like ours with similar equipment. However, winter there comes when it is summer here.

In Adair's "Annals of Bee Culture 1872," A. I. Root reported that his bees had stored a half ton of black locust honey with not more than 250 trees within their range of flight. He had but few bees and concluded that a locust grove would be a good investment for bee pasture even though its period of bloom is very short. He was planning his basswood orchard and wished for another ten acres for locust trees.

The everflowering black locust reported in the January American Bee Journal with its all-season bloom may prove to be what the beemen have so long sought, a source of continuous honeyflow for a long season.

The approach of the 48th wedding anniversary on April 8, brings to mind a remark by Bob Marshall, our county sheriff, when that important event took place in 1902. He said "Frank, when a man marries it is either the best day or the worst day he ever sees, depending on the mate selected." As it has turned out it was a good day for me and many times I have remembered how right he was, when I have observed the outcome of the matrimonial ventures of some of my friends.

Interest in the problems of the beekeeper continues to show in the most unexpected places. Much of it comes as a result of the urgent need of more bees for pollination but the public has become conscious of the problem through the activities of the honey plant committee of the Federation. Hundreds of newspaper stories and dozens of radio programs have given publicity to the things which the Federation is doing. As a result, beemen are finding it easy to find apiary locations and in many cases are offered a bonus to move in. Everything indicates that better days are ahead for the honey producer. Already he is getting a substantial return for a small investment in organized effort.

Safflower is one new crop which promises to be permanent in Nebraska, New Mexico, and other western states. Inquiries continue to come in as to what the beekeeper can expect in the way of pasture where the crop is grown. In our test garden the bees worked it heavily and apparently were getting good loads of nectar. A report from California indicated a heavy yield of both nectar and pollen. However, beekeepers within reach of some new fields report that the bees fail to notice it. I visited one such field in Washington last July and found no bees at work and was informed by a local beekeeper that his bees paid no attention to it. A similar report comes from a Nebraska neighborhood where a large acreage has been planted. We need a lot more information about safflower for bees.

A letter from Switzerland mentions the Japanese raisin tree as the source of much of the honey produced in a local apiary. This tree (**Hovenia dulcis**), has been brought to America but apparently is not planted commonly since we are unable to locate a nurseryman who offers it for sale. The description sounds attractive. A tree which yields nectar freely and bears an edible fruit is something worth investigating. If any reader is familiar with it we would like further information.

In the British Bee Journal for April 1, 1878, there is an interesting account of early efforts to exclude the drones and the queen from the supers by means of an "adapting board." Round holes were tried with poor success since the queen could usually get through as well as workers bees. Improvement followed improvement until by means of a grating with slots of a width of 165/1000 of an inch it was possible to permit the passing of workers while excluding queen and drones. Those of us who make use of modern beekeeping equipment little realize what effort was required in its perfection nor how many individuals contributed to the final result.

Pat. Appld. For

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